CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12], Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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0 COMBINED SERVICE INFORMATION – TYPEBAR

This publication replaces the "Safety and Service Information" booklet (F/N 241-5501-4, dated January, 1975). Included in this publication is all current service information from the "Safety and Service Information" booklet and service information from CEMs through CEM No. 157.

This publication is to be used with the "Technical Information Index" (TII) printed in the Typebar Part Number/Price List. The TII will indicate the page and item number of each piece of information printed in this booklet. Following is a step-by-step explanation of the features of the TII and the "Combined Service Information" (CSI) and their use.

TII Sample

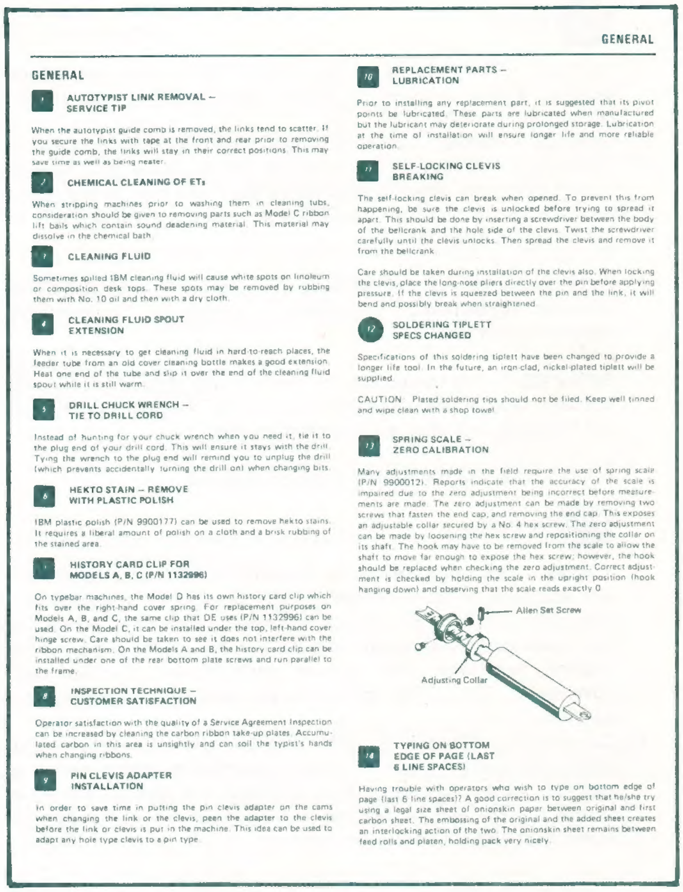
CEM: Original CEM number of the printed information. If this column is blank, the original CEM number is not available.

CEM	Current Pub.	Subject	CSI Page/Item
		GENERAL	ITEM NO.
168	*CEM*	*APM – Correction*	PAGE NO.
	CSI	*Autotypist Link Removal*	*1-1*
	CSI	*Chemical Cleaning Of ETs*	*1-2*
	CSI	*Cleaning Fluid*	*1-3*
	CSI	*Cleaning Fluid Spout Extension*	*1-4*
	CSI	*Drill Chuck Wrench – Tie To Cord*	*1-5*
	CSI	*Hekto Stain – Remove With Plastic Polish*	*1-6*
	CSI	*History Card Clip – Model A-B-C*	*1-7*
	CSI	*Inspection Technique – Customer Satisfaction*	*1-8*
	CSI	*Pin Clevis Adaptor Installation*	*1-9*

CURRENT PUB.: The location of the current information. If "CSI" is in this column then the far right column labeled "CSI Page/Item" will indicate the page number and item number of this information in this publication (CSI). If "CEM" is in this column, the information is in a current CEM and the CEM column indicates the current CEM number. If "APM" is in this column, the information is in the parts section or the adjustment section of the Adjustment Parts Manual.

(See Page And Item Samples For Explanation.)

PAGE SAMPLE



GENERAL

GENERAL

1 **AUTOTYPIST LINK REMOVAL – SERVICE TIP**

When the autotypist guide comb is removed, the links tend to scatter. If you secure the links with tape at the front and rear prior to removing the guide comb, the links will stay in their correct positions. This may save time as well as being neater.

2 **CHEMICAL CLEANING OF ETs**

When stripping machines prior to washing them in cleaning tubs, consideration should be given to removing parts such as Model C ribbon lift bails which contain sound deadening material. This material may dissolve in the chemical bath.

3 **CLEANING FLUID**

Sometimes spilled IBM cleaning fluid will cause white spots on linoleum or composition desk tops. These spots may be removed by rubbing them with No. 10 oil and then with a dry cloth.

4 **CLEANING FLUID SPOUT EXTENSION**

When it is necessary to get cleaning fluid in hard-to-reach places, the feeder tube from an old cover cleaning bottle makes a good extension. Heat one end of the tube and slip it over the end of the cleaning fluid spout while it is still warm.

5 **DRILL CHUCK WRENCH – TIE TO DRILL CORD**

Instead of hunting for your chuck wrench when you need it, tie it to the plug end of your drill cord. This will ensure it stays with the drill. Tying the wrench to the plug end will remind you to unplug the drill (which prevents accidentally turning the drill on) when changing bits.

6 **HEKTO STAIN – REMOVE WITH PLASTIC POLISH**

IBM plastic polish (P/N 9900177) can be used to remove hekto stains. It requires a liberal amount of polish on a cloth and a brisk rubbing of the stained area.

7 **HISTORY CARD CLIP FOR MODELS A, B, C (P/N 1132996)**

On typebar machines, the Model D has its own history card clip which fits over the right-hand cover spring. For replacement purposes on Models A, B, and C, the same clip that DE uses (P/N 1132996) can be used. On the Model C, it can be installed under the top, left-hand cover hinge screw. Care should be taken to see it does not interfere with the ribbon mechanism. On the Models A and B, the history card clip can be installed under one of the rear bottom plate screws and run parallel to the frame.

8 **INSPECTION TECHNIQUE – CUSTOMER SATISFACTION**

Operator satisfaction with the quality of a Service Agreement Inspection can be increased by cleaning the carbon ribbon take-up plates. Accumulated carbon in this area is unsightly and can soil the typist's hands when changing ribbons.

9 **PIN CLEVIS ADAPTER INSTALLATION**

In order to save time in putting the pin clevis adapter on the cams when changing the link or the clevis, peen the adapter to the clevis before the link or clevis is put in the machine. This idea can be used to adapt any hole type clevis to a pin type.

10 **REPLACEMENT PARTS – LUBRICATION**

Prior to installing any replacement part, it is suggested that its pivot points be lubricated. These parts are lubricated when manufactured but the lubricant may deteriorate during prolonged storage. Lubrication at the time of installation will ensure longer life and more reliable operation.

11 **SELF-LOCKING CLEVIS BREAKING**

The self-locking clevis can break when opened. To prevent this from happening, be sure the clevis is unlocked before trying to spread it apart. This should be done by inserting a screwdriver between the body of the bellcrank and the hole side of the clevis. Twist the screwdriver carefully until the clevis unlocks. Then spread the clevis and remove it from the bellcrank.

Care should be taken during installation of the clevis also. When locking the clevis, place the long-nose pliers directly over the pin before applying pressure. If the clevis is squeezed between the pin and the link, it will bend and possibly break when straightened.

12 **SOLDERING TIPLETT SPECS CHANGED**

Specifications of this soldering tiplett have been changed to provide a longer life tool. In the future, an iron-clad, nickel-plated tiplett will be supplied.

CAUTION: Plated soldering tips should not be filed. Keep well tinned and wipe clean with a shop towel.

13 **SPRING SCALE – ZERO CALIBRATION**

Many adjustments made in the field require the use of spring scale (P/N 9900012). Reports indicate that the accuracy of the scale is impaired due to the zero adjustment being incorrect before measurements are made. The zero adjustment can be made by removing two screws that fasten the end cap, and removing the end cap. This exposes an adjustable collar secured by a No. 4 hex screw. The zero adjustment can be made by loosening the hex screw and repositioning the collar on its shaft. The hook may have to be removed from the scale to allow the shaft to move far enough to expose the hex screw; however, the hook should be replaced when checking the zero adjustment. Correct adjustment is checked by holding the scale in the upright position (hook hanging down) and observing that the scale reads exactly 0.

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Having trouble with operators who wish to type on bottom edge of page (last 6 line spaces)? A good correction is to suggest that he/she try using a legal size sheet of onionskin paper between original and first carbon sheet. The embossing of the original and the added sheet creates an interlocking action of the two. The onionskin sheet remains between feed rolls and platen, holding pack very nicely.

A

B

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A. Item Number: This number corresponds to the number shown in the TII and is used to locate the information. The number will appear in a CEM category symbol to indicate the type information contained. (See General Section, "CEM Category Symbol – Explanation.") On reliability items, an expiration date will be shown. This number will start with "1" on each new page.

B. Subject.

C. CEM Number: If the information was originally published in a CEM, the number(s) of the CEM(s) will appear in parentheses in this area. If this area is blank, the information was printed in a publication other than a CEM.

D. Date Published: This date is the date the informtion was sent to the field.

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1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980

■ CEM CATEGORIES — EXPLANATION (1/76)

The arrangement of Product CEMs has been made easier. Application categories have been removed and the types of engineering changes have been reduced.

Product CEM Categories Are:

A. ⬢ Safety

1. Purpose — The purpose of the Safety CEM is to communicate product safety changes to ensure safe operating and service conditions.
2. Coverage — Safety CEMs will apply to all specified equipment.
3. Conditions — Usually, safety changes will be made on a normal service call if the unsafe condition exists. If the need is high (e.g., possible electrical short), the CEM will have a completion date to ensure quick attention.

   Parts and labor will be available at no charge to all customers (Service Agreements, IBM-owned, self-service, competitive service and per call).

   Safety CEMs will indicate an expiration date at the time of publication. Non-Service Agreement accounts will be charged per call for parts and labor after expiration date.

   Safety CEMs will use service codes as assigned.

B. ● Reliability

1. Purpose — The purpose of the Reliability CEM is to communicate additions or substitutions of parts; or a change in adjustment procedure required to bring a machine, component or supply level consistent with quality standards set by IBM; and/or meet original functional and service performance specifications.
2. Coverage — This CEM applies to all specified equipment and supplies.
3. Conditions — Reliability CEMs will be applied to equipment when the specified set of failure conditions exists within a specified range. Usually, this CEM will be applied during a normal service call or preventive maintenance visit on Service Agreement and IBM-owned equipment.

   If requested, IBM will provide per call, self-service and competitive service accounts with parts and labor at no charge only if:

   a. The service call was caused by the malfunction in the CEM and the machine is in the correct serial range, or
   b. While on a call on the same machine, a check for symptoms indicates that a possible failure condition exists.

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   Reliability CEMs will use service codes as assigned.

C. ■ Service Information

1. The purpose of the Service Information CEM is to:

   Communicate changes in design of parts, or in adjustment procedures which are the result of continuing engineering for product improvement.

   Communicate manufacturing changes which improve assembly or manufacture of equipment or supplies, or improve their serviceability.

   Communicate product feature changes designed to extend the capabilities, usefulness, or saleability of the existing product line.

   Communicate service tips, service procedures, tool information and other information.

2. Coverage — Service Information CEMs will apply to all specified equipment and supplies.
3. Conditions — Usually, action indicated in a Service Information CEM will be performed on a normal service call or preventive maintenance visit.

   Any parts and/or labor, referred to in the Service Information CEMs will be billable to self-service, per call, and competitive service accounts. Applicable service codes will be used on IBM-owned and Service Agreement equipment.

   Service Information CEMs will be deleted as soon as the information is included in a permanent form-numbered publication, i.e., parts manual, service manual, tool catalog, etc.

   Service Information CEMs will use any number of warranty or nonwarranty service codes as assigned. Normally, no recovery codes will be used after the new equipment warranty has expired.

PRODUCT CEM INSTALLATION GUIDE

Safety	Reliability	Service Information
Parts and labor available at no charge to ALL customers.	Under certain conditions, parts and labor available at no charge to ALL customers.	Per call to all non-Service Agreement customers. No charge for parts and labor to Service Agreement customers. Install as needed on IBM equipment.
Use assigned service code.	Use assigned service code.	Use applicable service code.

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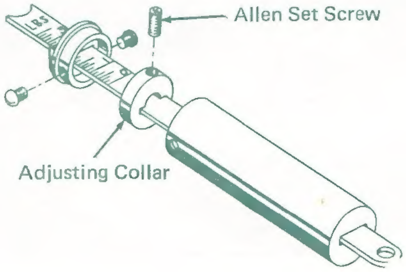

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1 VOLT-OHMMETER FACE FROSTING

Some meter faces are being damaged by cleaning fluid coming in contact with the face. This "frosting" effect can be removed ordinarily with IBM plastic polish. In an emergency, you can cover with clear cellophane tape or apply a thin coat of No. 10 oil. Until a face which is not susceptible to cleaning fluid is available, use care to keep the meter away from cleaning fluid.

2 POWER CLEANER (P/N 9900469) (CEM 76) (1/71)

Under full-stalled conditions, with power applied, it is possible for the power cleaner (P/N 9900469) to catch fire. This condition must be maintained in excess of five minutes for open flames to result.

Under no circumstances is the power cleaner to be left on unattended or stalled with electrical power applied.

The unattended use of a power cleaner for other than its intended purpose could result in loss of property or personal injury.

BACKSPACE

3 BACKSPACE BELLCRANK SPRINGS – WEAK – MODEL D "EXECUTIVE" (CEM 127)

Some Model D "Executive" typewriters may have weak backspace bellcrank springs (01-59) that could cause backspace failures due to the backspace pawls not fully restoring.

For added spring tension, the left end of the spring may be rehooked to the front side of the rail brace.

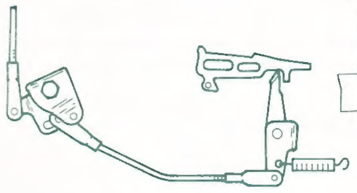
4 BACKSPACE – MODEL D "EXECUTIVE" (CEM 152) (8/75)

To facilitate "Executive" backspace adjustments.

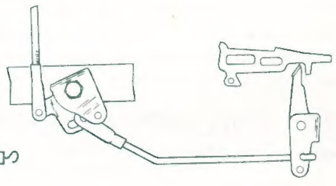
Install link (P/N 1190637) (Figure 1).

Install the link in the outside hole on the alignment bellcrank and the spring on the inside hole.

This link replaces the former level alignment link and will be on all new machines.



New



Old

5 BACKSPACING ON ROBOT OPERATING

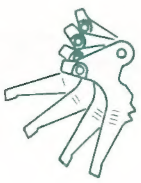
For increased efficiency and speed when underscoring on a robot-operated typewriter, the underscore can be made into a dead or non-escaping typebar. This is done by removing the portion of the typebar where it contacts the U-bar. It is then possible to underscore and backspace simultaneously.

6 APM ERROR (CEM 168) (10/79)

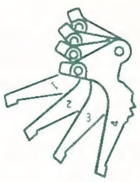
In Model C&D APM (F/N 241-5231-8), frame 130, the adjustment notes for 1/36 pitch B/S guide pin adjustment are reversed. 1/32 pitch adjustment notes are correct. Refer to C&D Service Manual (F/N 241-5665-1) for proper wording.

7 "EXECUTIVE" BACKSPACE PAWL – IDENTIFICATION (CEM 149)

"Executive" backspace pawls can be identified as illustrated:



1/32 Pitch



1/36 Pitch

CARRIAGE AND RAIL

1 REINSERTING PAPER CORRECTLY ON WRITING LINE

To prevent paper from rising above the writing line when the feed rolls are engaged after reinserting paper, two springs may be installed from the front feed roll shaft to the rear feed roll shaft. These springs should be positioned between the last two feed rolls on each end. Convenient springs to use are the Models A, B and C cam lever spring. The springs will cause the deflector to tip back slightly, preventing the paper from buckling in the area of the front feed rolls.

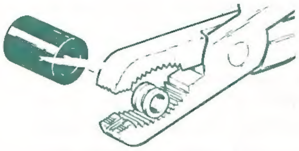
CAUTION: The spring tension must be reduced to prevent the front lips of the deflector from touching the paper. If this is not done, marking of the copies may result.

2 SINGLE-PIECE DEFLECTOR 20" (MODEL C) WORKS ON MODEL B

Although there was no single-piece deflector designed specifically for the Model B 20" carriage, a few Customer Engineers have tried the Model C deflector and found that it will fit on the Model B if four clips (P/N 1115344) are added on the shaft to prevent sidewise shifting. The advantage of the single-piece deflector is in preventing marking on paper master such as multilith and multigraph, caused by the breaks in the split deflector.

3 BAIL ROLLS – LOOSE INSERTS

If problems are being experienced with inserts coming loose on nylon bail rollers, the rollers can be tightened by serrating the insert with a pair of gas pliers as shown.



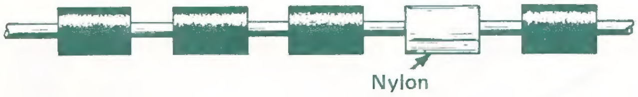
For best results, rotate the insert and squeeze lightly several times. Avoid squeezing too hard as it might bend the insert.

4 BAIL ROLLS – MARKING PAPER (CEM 122)

Current production Model D bail rolls are now manufactured with a urethane composition. This new bail roll is less susceptible to transfer of ink or toner. Replace in sets; part number remains the same.

5 BUCKLING OF PAPER MASTERS

The thickness of a paper master often causes it to buckle in the center. The typed area touches the cardholders and smudging results. If a problem of this nature arises, it can be remedied by adding one nylon and one rubber bail as shown below.



For normal correspondence typing with carbons, rollers No. 4 and No. 5 can be placed at the right end of the paper bail. This will prevent the hard nylon roll from marking the carbons. If typing is to be done on a master, slide rolls No. 1 and No. 2 to the left. Bail roll No. 4 (nylon) can then be adjusted to track down the center of the master.

6 CARDHOLDERS – CLEANING – MODEL C

An effective method of cleaning Model C cardholders is to place a few drops of No. 10 oil on them and rub dry with a cloth. The oil has a cleaning and polishing action, and will not damage the surface of the cardholders.

7 COPY CONTROL LEVER – LOOSE – MODEL D (CEM 150)

Some machines have reached the field with the copy control lever setscrew loose (02-141), which may cause the platen to move off cylinder. This can be detected when the copy control lever will not stay in the "A" position.

8 CARDHOLDERS – ADJUSTING – SERVICE TIPS

For ease of adjusting cardholders front to rear, use the following tools as illustrated:

1. To form the cardholders away from the platen, use the grip ring pliers on the center supports and the duckbill pliers on the outside supports (Figure 1).

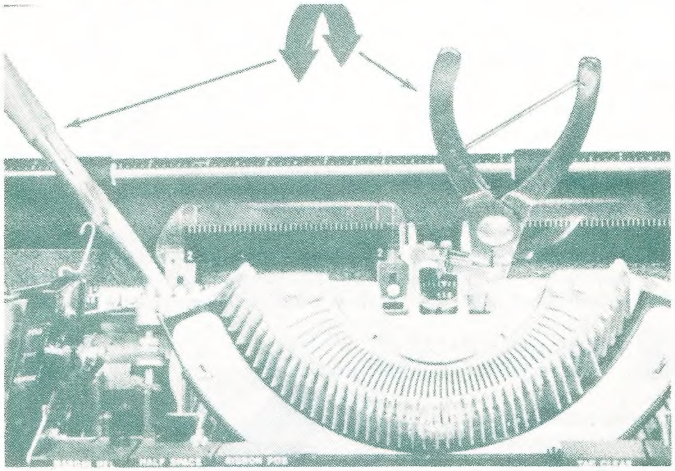


Figure 1

2. Use the large screwdriver to form the supports to bring the cardholder closer to the platen (Figure 2).

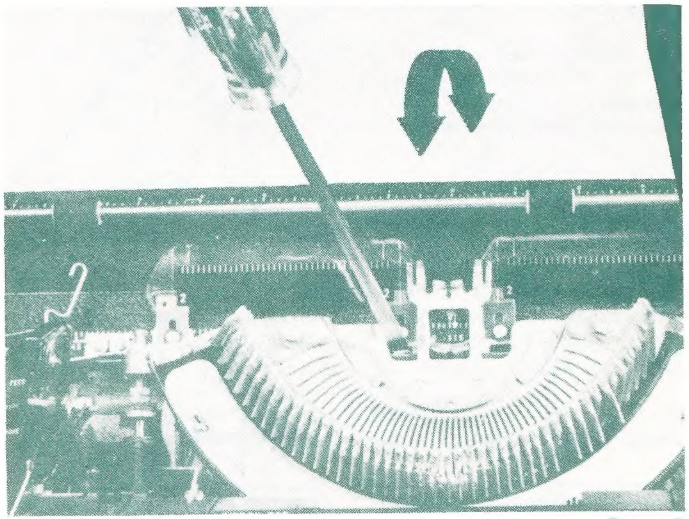


Figure 2

NOTE: When forming the outside supports, it helps to move the carriage out of the way.

9 PAPER DEFLECTORS SQUEAKING

Can be eliminated by attaching a strip of plastic tape or similar material to the deflector at the point where it contacts the rear feed roll levers. Periodic replacement of the tape will prevent recurrence.

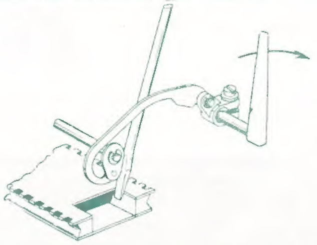
1 PAPER FEED PROBLEMS – FRONT PAPER SCALE

Some front scales have a rough painted surface on the back side of the scales. This may cause paper or envelopes to wrinkle or bend. Every effort is being made to ensure a smooth finish of these parts. When a rough surface is encountered, 400 or 600 grit sandpaper or steel wool can be used to smooth the surfaces.

In some cases, paper wrinkling may be corrected by forming the front paper scale spring to decrease the spring tension holding the front scale against the paper.

2 FEED ROLL RELEASE INCREASED THROW

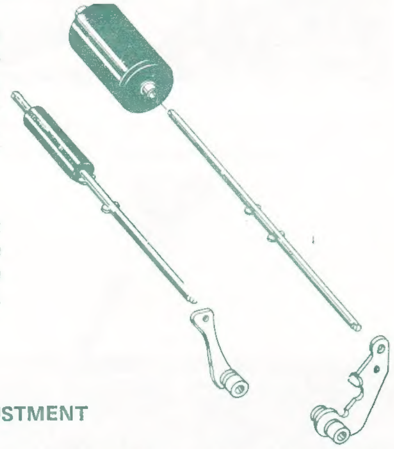
A quick and easy method to increase the throw of the feed roll release lever is as follows.



Raise the RH end cover; move copy control to rear; move paper release to the front (released position); insert a screwdriver behind the small link and into the opening in the carriage bed.

Now gently force the feed roll release lever toward rest position. Operate the lever a small amount at a time until the correct amount of throw is achieved. The end result is a change in length of the link.

3 FEED ROLL SHAFT COMPATIBILITY – MODEL D (CEM 14)

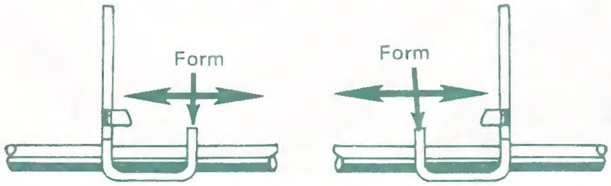


The new-style feed roll shaft is not compatible with the old-style feed roll levers on Model Cs or Model Ds below S/N: 6198123 Standard and S/N 8328277 "Executive" Typewriters.

The new-style feed roll shaft can be installed on these machines by installing the new-style feed roll levers.

4 PAPER TABLE ADJUSTMENT

When the paper table is found slipping slightly from side to side, the tab on the paper bail pivot shaft can be formed to eliminate this side play.



5 PLATEN GUIDE BELLCRANK – LOOSE SETSCREW – SERVICE TIP

A loose setscrew in the guide bellcrank will not properly position the platen when the multiple copy lever is returned to A. Improper ring and cylinder impression problems will result.

6 PLATEN ROLL BACK

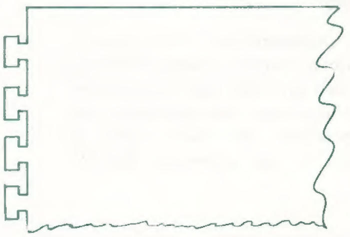
Use a smaller diameter detent roller when experiencing roll back problems, especially on long carriage machines.

7 REAR FEED ROLL REMOVAL

Model C rear feed rolls can be removed easily without tools. On the set of feed rolls being removed, push the LH rear lever down and to the left. Slide the feed roll shaft out of the left-hand lever; then lift it out of the right-hand lever. Use similar procedure to replace the feed rolls – insert the right-hand end into the hole; push the left-hand lever to the rear and insert the left end of the shaft into its hole. This technique will eliminate any forming of cradle assemblies and possible part damage. Make sure the pressure lever is restored to the operating groove of the feed roll release shaft.

8 ROLL BACK – SPECIAL FORMS

Many hospitals use a special paper with tabs at the left-hand edge for special binders. These tabs sometimes catch on the front paper scale during roll back and tear this form. To overcome this condition, install a feed finger (P/N 1099650) on the paper scale so it will cover the tabs and guide them into the feed rolls.

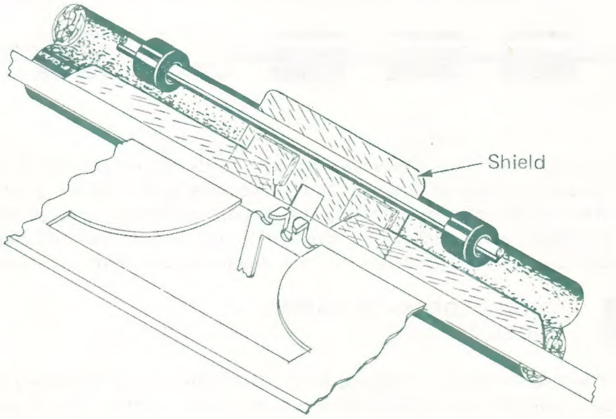


9 FRONT PAPER SCALE SPRING REPLACEMENT – ALL MODELS

To replace front paper scale springs on Models A, B and C ETs, use the Model C single loop spring (P/N 1103719). This spring can be installed without removing parts from the typewriter.

10 OVERPRINTING SHIELD

This shield is intended for use on Models C and D ETs equipped with the increased height cardholders. This shield is very useful when an application requires typing near the upper edge of a card. For installation, refer to the illustration below:



(Continued On Next Page)

Installation:

1. Insert overprint shield behind cardholders as shown.
2. Position bail shaft in front of shield.
3. Position bail rolls at extreme ends of bail shaft to eliminate interference with shield.

The shield can be installed and removed by the operator. The back of the shield should be cleaned often to eliminate smudges on the paper.

1 PAPER BAIL – LOOSE – MODEL D (CEM 153)

If experiencing problems with paper bail arms (02-312, 313) camming over stops on paper bail pivot shaft, form the pivot shaft arms as shown below:

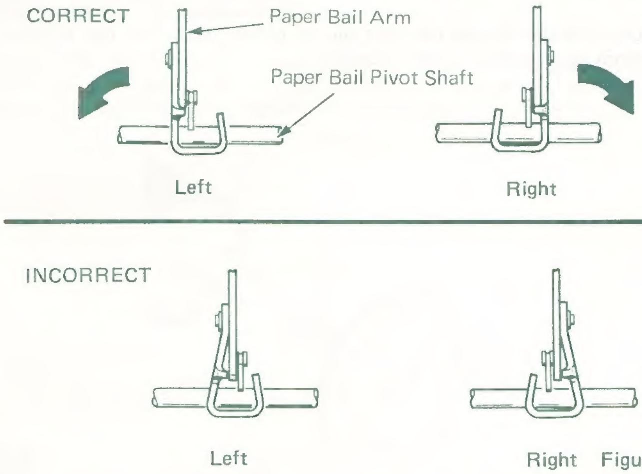
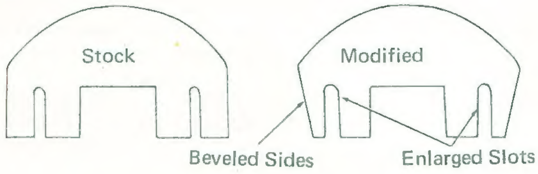


Figure 1

NOTE: If the arms still cam over pivot shaft stops, remove bail arm "C" clips (02-12) and replace with grip clip (P/N 528552). This part is in Parts Packet No. 3.

2 UNDERPRINTING SHIELDS – QUICK INSTALLATION

Modify underprinting shields as illustrated for easy insertion and adjustment.



The beveled sides make insertion easier and the enlarged slot makes vertical adjustment easier after the shield is in place.

3 RECONDITIONED TYPEBAR TYPEWRITER – UL DOUBLE INSULATED (CEM 106) (8/72)

All Typebar typewriters reconditioned as of 3-3-72 meet UL double insulation standards which are:

1. The "L" shaped bracket used on old style, ring mount, Domestic and World Trade Model C typewriters have a strip of insulation secured with an adhesive (Figure 1).

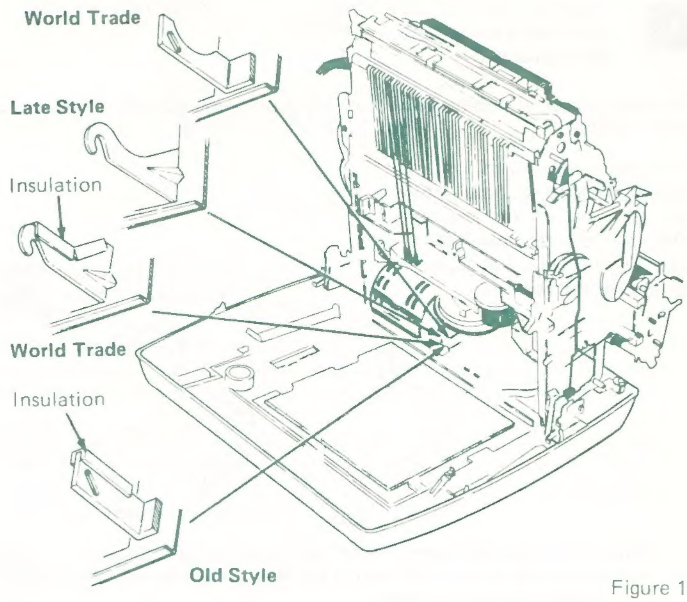


Figure 1

2. Some Model C side frames have a strip of insulation secured with adhesive.
3. White tubing is placed over the motor leads and is held in place by an additional piece of shrink tubing (Figure 2).

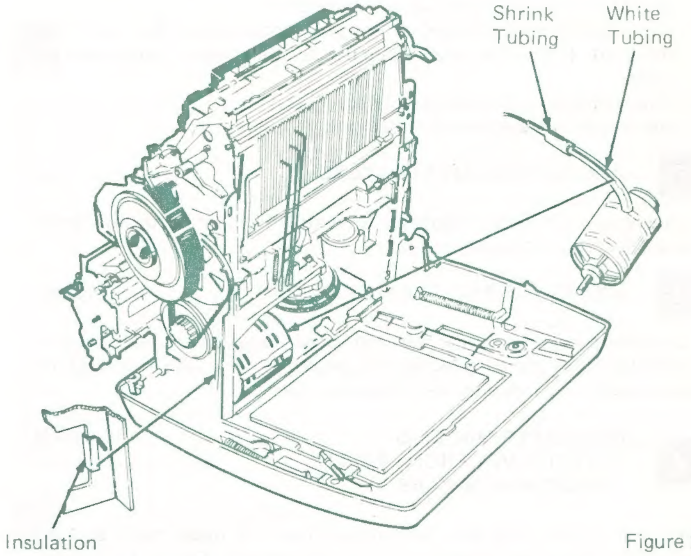


Figure 2

4. A motor guard is placed between the rails on the LH side.
5. A rear cover guard attached to the left side of the rear cover may appear on some Model D typewriters.
6. A patent label containing the following:
    a. The words "double insulated" use only identical replacement parts.
    b. The UL control number "286A"
    c. The word "listed"
    d. The UL symbol

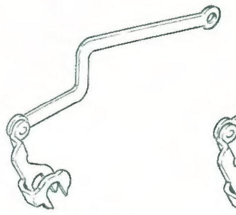
Model D patent labels and stickers remain the same as production machines.

Double insulation cannot be field installed.

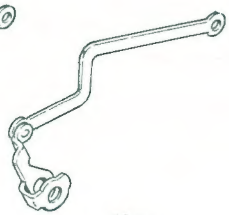
1 PLATEN DETENT RELEASE – LINK AND CAM ASM. – REDESIGNED (CEM 160) (12/76)

To allow easier replacement of link and cam asm. (02-64). Replaces P/N 1154089.

The new link and cam asm. removes the need to disassemble the left end of the carriage (02-200) for new installation. Use the following procedure to remove and replace:



Old



New

1. Remove carriage end cover, paper table and related parts.
2. Remove platen detent arm spring (02-44). This will remove detent arm tension from cam surface.
3. Using duckbill pliers, bend and break the old cam to remove from shaft (02-165). Remove all remaining parts of the old link and cam asm.
4. Install new type asm. but do not put cam over shaft until detent release bellcrank (02-70) has been attached to link asm. Bellcrank should be removed from old link assembly.
5. After bellcrank is attached to link, push cam part of the asm. over the shaft. It may be necessary to use duckbill pliers to place cam on shaft.
6. Reinstall detent arm spring (02-44).
7. Replace all parts removed in step one.

2 CONVERTING LIFT PLATENS

If converting lift platen carriages to standard or pin feed, also order Models C and D front and rear rails.

3 NEW-STYLE FRONT PAPER TABLE (12/69)

To facilitate manufacturing, the front paper table pitch scale has been eliminated from standard Model D Typewriters. Also, the inch scale has been modified to indicate 1/4" increments only.

4 NEW-STYLE MODEL D "EXECUTIVE" FRONT PAPER TABLES AND SCALES (5/70)

The pitch marks have been eliminated from the paper table, and the inch marks have been changed to 1/4" increments (Figure 1). In addition, the center mark on the following front paper scales has been shifted as indicated below.

LENGTH	PITCH	OLD CENTER	NEW CENTER
13"	1/36	55	56
17"	1/32	65	64
17"	1/36	70	72
20"	1/32	75	76
20"	1/45	105	107

The center mark on all other scales remains the same.

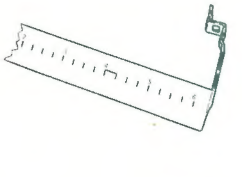


Figure 1

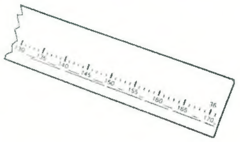


Figure 2

On machines of the above carriage length and pitch prior to this change, replacement of the front paper table will necessitate replacing the front scale also. The converse is true when the front scale needs replacement.

To facilitate identification, a pitch stamp has been added to the RH end of the paper scales (Figure 2).

5 FRONT PAPER TABLE – MODEL D – SHARP EDGE (CEM 87) (6/71)

Front paper table at the point it contacts the platen.

A safety hazard may occur after severe wear that may eventually produce a sharp edge at the point of contact with the platen. A material change has corrected this condition on current production parts.

Check all Model Ds on the next service call or inspection and replace the front paper table if wear is noted.

CARRIAGE RETURN AND INDEX

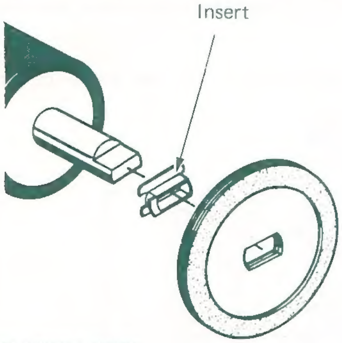
1 CLUTCH DISC – REMOVAL

The following method is offered for easier removal of the C/R clutch disc on modified carbon ribbon equipped machines:

1. Remove keyplate.
2. Use T-bender to push and twist to release the clutch arm. Leave the T-bender on the clutch arm, ready for reinstallation.
3. Remove the disc with the scissor clamps.
4. Reverse the above for reinstallation.

2 CLUTCH DISC SLEEVE INSTALLATION – MODEL D

The sleeved disc should be installed with the two flanges toward the power roll as shown in the illustration. This will ensure that the insert will not be dislodged or damaged the next time a power roll is installed.



3 CORK CLUTCH DISC (CEM 151)

Some cork clutch discs have reached the field with insufficient adhesive. Before installing, check by rubbing finger on outer edges of cork, making sure it is secure. Also, it is recommended the cork disc be used in Models A, B and C typewriters with the aluminum clutch assembly only.

4 CORNER PULLEY REMOVAL

This part may be easily removed by following this procedure. Remove the extreme left-hand "C" clip from the platen guide shaft; depress the rear feed roll cradle lever and move the entire cradle to the left. This will expose the screw for easy removal.

5 INDEXING FAILURES – MODEL D WITH TORQUE LIMITER (CEM 111)

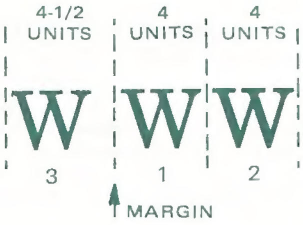
Extra indexing can occur on a long carriage return if the carriage return tension is excessive. This is most prevalent on machines with 66 tooth ratchets and is noticed as an extra half space of paper feed. If the tension is excessive, the torque limiter can cause the carriage return tape to slacken momentarily, permitting the index pawl to reset and feed an extra tooth.

6 OVERBANK ADJUSTMENT – "EXECUTIVE" TYPEWRITERS – A B C D-4

With the carriage at zero margin, the No. 5 escapement pawl should be holding.

An easy method to check the overbank adjustment is:

1. Return the carriage to the LH margin.
2. Type two lower case *w*s.
3. Manually move the carriage into extreme overbank and type a third lower case *w*.
4. The lower case *w* in extreme overbank should clear the first *w* by one-half unit as compared to the first two *w*s you typed.



7 QUICK RELEASE CLUTCH DISENGAGEMENT

If disengagement of the quick release clutch arm from the clutch lever is experienced, the problem may be corrected by cleaning and relubricating the arm and the clutch plate sintered iron bushing.

If disengagement continues to occur, add a washer between the side frame and the clutch bracket toward the front of the machine. This will change the relative angle between the clutch arm and clutch plate, preventing it from disengaging.

8 TAPE BREAKAGE – CARRIAGE RETURN

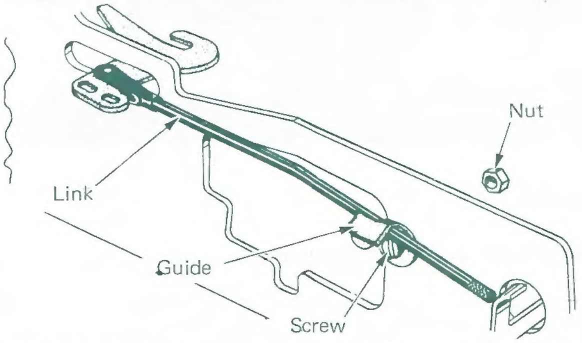
Carriage return tape breakage may be caused by sharp edges on the rivet and washer of the pulley end of the tape. Breakage will occur where the tape overlaps the rivet. Check for this condition prior to installing any return tape.

9 THREADING C/R TAPES – SERVICE TIP

Facing the front of the machine, wind the clutch pulley spring fully and let it slowly unwind until one of the eyes in the pulley is visible from the front of the machine. With the power off, latch the clutch manually. Take new return tape and place the retaining hook of the tape on the pulley in its proper relation. Unlatch clutch and let pulley unwind two revolutions while holding the return tape. This threads the tape around the pulley and through the clutch mechanism properly. Again latch the clutch manually. Take a springhook and catch the tape on the back side of the clutch pulley and pull the loose end through clutch mechanism at the top of the clutch pulley and thread it through the right-hand carriage return pulley assembly. Unlatch the clutch to finish the hook-up, move the carriage all the way to the right and secure the end of the tape in one of the holes in the bottom of the carriage. Then move the carriage to the left, drawing the carriage return tape through the machine. It may then be removed from the bottom of the carriage and installation completed.

10 TYPING IN OVERBANK PROBLEMS

On those Model Cs where normal adjustments fail to prevent typing in the overbank and this becomes an operator problem, the installation of the link guide, screw and nut will eliminate the problem.



Relocate the clutch latch spring to the side frame and install the link, link guide screw and nut as shown in the illustration.

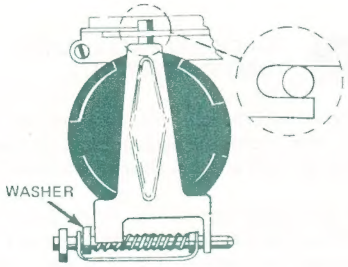
This effectively eliminates typing in the overbank, but it should be understood by the typist that there is a possibility of missing the first character entirely if he/she attempts to type in the overbank area.

1 TORQUE LIMITER CARRIAGE RETURN TAPE INSTALLATION (CEM 54)

The carriage return tape must be twisted 1/2 turn, counterclockwise, observing from right side of the machine to clear the U-bar stud. Failure to do so will result in frayed and broken tapes.

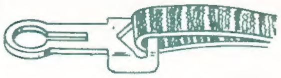
2 TORQUE LIMITER ADJUSTMENT

For the torque limiter to operate properly, you must position the clutch operating arm in the rear of the slot in the clutch lever bracket. This may be accomplished by placing washers between the mounting bracket and operating arm as shown. Each washer will move the arm .030" (0.76 mm) to the rear.



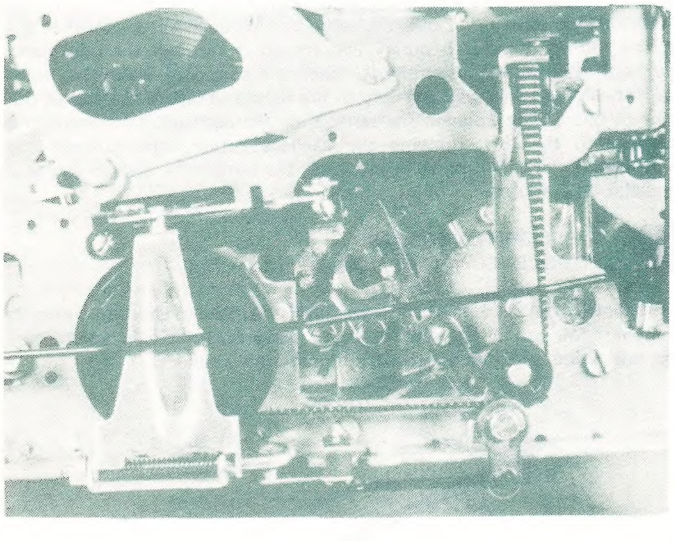
3 CARRIAGE RETURN TAPE – UNIVERSAL – INSTALLATION

When installing the universal return tapes on Model A carriages, be sure to install the tape as shown. Erratic linespace may occur if the tape is installed upside down.



4 FIELD-INSTALLABLE CARRIAGE RETURN TORQUE LIMITER BILL OF MATERIAL

The clutch tension increases to such an extent that the carriage locks at the left-hand margin.



Install field installable B/M torque limiter, as follows:

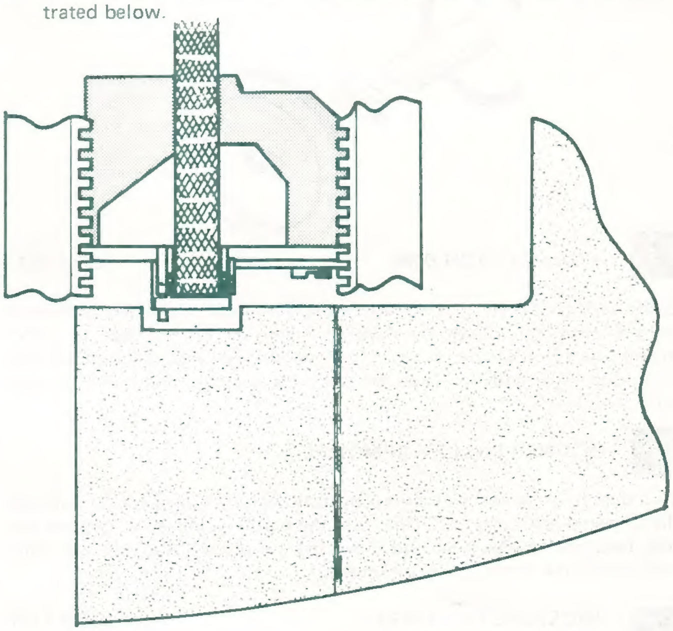
1. Lock machine in tilt-up position and remove the C/R tape, switch link, pulley assembly, clutch mounting bracket and clutch operating arm assembly.
2. Remove two lower right side frame mounting screws (08-208). (See illustration.)
3. Position the torque limiter mounting bracket (Ref. 142) against the machine side frame with the lower extension of the bracket located in the slot between the side frame and the side frame flange.

NOTE: The mounting bracket must be in the down position.

4. Install the side frame mounting screws (08-208).
5. Attach the bellcrank mounting bracket (Ref. 139) with one mounting screw (Ref. 140).
6. Install the idler bellcrank and pulley assembly (Ref. 133) with "C" clip (Ref. 134).
7. Install the intermediate bellcrank (Ref. 130), which has the bellcrank connecting link (Ref. 137) pre-installed, over the small stud on the torque limiter mounting bracket.
8. Install the spacer (Ref. 141) on the intermediate bellcrank mounting bracket between the intermediate bellcrank and the bottom of the side frame.
9. Install the second intermediate bellcrank mounting bracket screw (Ref. 140).
10. Install the pulley assembly (Ref. 143).
11. Install the clutch mounting bracket assembly.
12. Install the switch link and C/R tape.

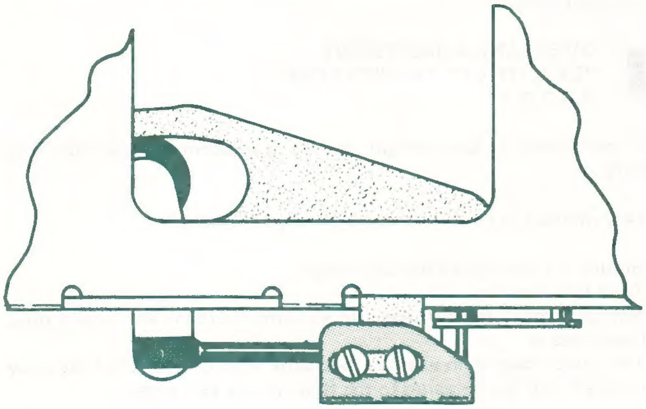
NOTE: On Model Cs the switch link must be re-formed to the outside of the clutch so as not to interfere with the carbon ribbon mechanism.

13. Remove material from the right rear corner of the cover as illustrated below.



NOTE: A new C/R tape should also be installed because of the required increased length. Also use the rubber asbestos clutch disc with this change.

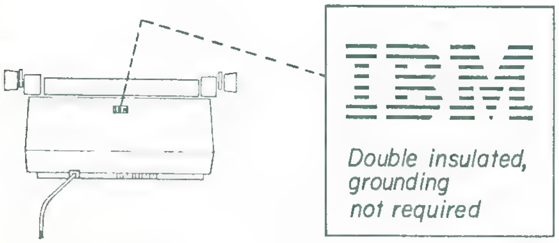
ADJUSTMENTS: Adjust the intermediate bellcrank mounting bracket screws (Ref. 140) until the intermediate bellcrank (Ref. 130) pivots freely without binds in the linkage.

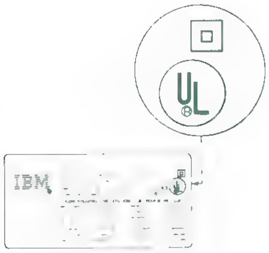


COVERS

1 PLATE, LOGO – DOUBLE INSULATION (CEM 100) (4/72)

To make is easier to identify UL approved double insulated machines, a new logo is being installed on the rear of the cover.





Install this new logo as required ONLY on machines that meet the following conditions:

1. Has a plant-installed patent label with:
   a. The words "double insulated," use only identical replacement parts.
   b. The UL control number "286A"
   c. The word "listed"
   d. The UL symbol
2. Has a shaded pole motor with white leads and a two-wire linecord
3. Be above the following serial numbers:
   Std. 6503658
   Exec. 8435167

The old logo may be removed by running cleaning fluid around the edges and prying off. The adhesive on the new logo may be activated by putting IBM cleaning fluid on the back.

NOTE: If replacing covers on double insulated machines that meet the preceding requirements, also order the new logo. When converting a machine with this logo to 3 wire, the logo must be replaced with the IBM logo and a non-double insulated patent label installed. **Double insulation cannot be field installed.**

2 WRINKLE FINISH COVERS AND PAINT DISCONTINUED (CEM 105) (8/72)

Because of recent laws prohibiting the manufacture of certain paints, wrinkle finish covers, touch-up wrinkle paint and touch-up spray cans will no longer be available.

Lacquer and polyester paint for touch-up and refinishing purposes will remain available.

On the next revision of the Parts Catalog Part No./Price List, these changes will be reflected and only the part numbers that remain will be available.

3 NEW STANDARD COLOR FOR MODEL D KEYPLATE AND FRONT PANEL

Soft white is the new standard color for keyplates and front panels on Model D typewriters. Effective April 14 1969, all Model D typewriters are manufactured with soft white keyplate and front panel. All other colors ordered on SER only.

4 AUTOTYPE COVER REMOVAL

Bottom cover removal on autotype units is difficult due to the autotype links falling off the keylever. This can be solved by wrapping a thin rubber band around the bottom of the links, preventing them from coming loose.

5 BOLTING DOWN – TORQUE LIMITER, MODEL D

Use care when bolting down Model Ds equipped with the carriage return torque limiter. If long-threaded screws are used in bolting a machine down, the screw may fray or break the carriage return tape where it travels parallel to the frame. Use spacers or washers under the screw head to prevent this from occurring.

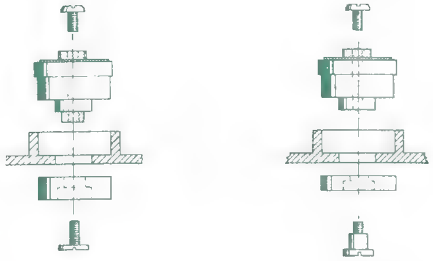
6 BOTTOM COVER MOUNTINGS – INCOMPATIBILITY

The Model D and late Model C bottom cover mountings are not compatible with early Model Cs.

When replacing either the foot, insert, or foot screw, care should be exercised to maintain one level of parts as follows:

1. When a foot is replaced on an early Model C, all of the feet must be replaced.
2. When replacing an insert on an early Model C, the foot screw must also be replaced.
3. When replacing a foot screw on an early Model C, the insert must also be replaced.

The shouldered foot screw is used with the short insert.


New Style Old Style

7 CARRIAGE END COVERS – PAINT TEXTURE CHANGE – MODEL D STANDARD (CEM 143)

When replacing an end cover (04-205, 206), it may be necessary to replace both end covers due to a manufacturing process change in paint texture on replacement covers.

8 CARRIAGE RELEASE BUTTON – LOOSE – SERVICE TIP

A quick fix to repair a loose carriage release button is to install clip (P/N 1072821) on the post over the button hinge clip.

1 CARRIAGE RELEASE BUTTON – SPRING REMOVAL

In order to prevent the possibility of damage to the carriage end cover, it is recommended that the following procedure be followed when removing the hand carriage release button spring:

1. Depress button through end cover until spring tension is destroyed.
2. Rotate spring clip 90 degrees on its mounting stud.
3. Using a 6" screwdriver as a lever, raise spring clip off the mounting stud.
4. Press new button and spring assembly onto stud.

2 COVER INTERLOCK ADJUSTMENT

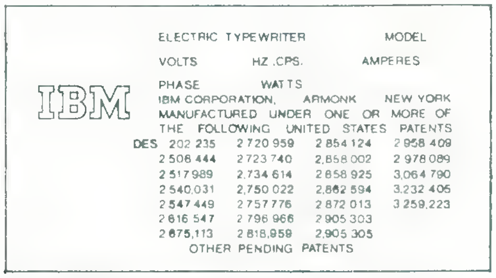
When experiencing fabric ribbon reverse failures, do not overlook the possibility of the front panel interlock not contacting the actuating interlock lever. Form cover interlock for proper adjustment.

3 FRONT COVER ADJUSTMENT

Excessive side play in the front cover can be minimized by one of two methods. If the machine has washers under the cover latch screws, they can be positioned left or right under the screw heads for good cover fit. If there are no washers under these screws (later level machines do not have these washers), the upright lugs on the cover latch brackets can be formed outward for the desired results.

4 PATENT AND IDENTIFICATION LABEL

When bottom covers are replaced on Models C and D Typewriters, also install the patent and identification label and fill in all information from the old label [i.e., model, volts, Hz (CPS), amperes, phase and watts].



ELECTRIC TYPEWRITER MODEL
VOLTS HZ .CPS. AMPERES
PHASE WATTS
IBM
IBM CORPORATION, ARMONK NEW YORK
MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING UNITED STATES PATENTS
DES 202 235 2 720 959 2 854 124 2 958 409
2 508 444 2 723 740 2,858 002 2 978 089
2 517 989 2,734 614 2 858 925 3,064 790
2 540,031 2,750 022 2,862 594 3.232 405
2 547 449 2 757 776 2 872 013 3 259,223
2 616 547 2 796 966 2 905 303
2 875,113 2 818,959 2,905 305
OTHER PENDING PATENTS

5 MOUNTING WITH POSITION PINS – NOISE

Noise may sometimes occur when a machine is mounted on a metal desk with positioning pins. The noise is usually caused by metal pins vibrating inside the mounting holes in the desk. To eliminate this condition, drill a 3/8" hole in the desk (purchase 3/8" bit locally) and install a rubber grommet (P/N 220690) (available from local DP stock) in each hole. The grommet will isolate the positioning pins from the desk and eliminate the noise.

6 POSITIONING PIN USAGE – SAFETY CHECK (CEM 98)

When using positioning pins to hold the typewriter in position, the pins should not extend so far under the desk as to present a hazard to the operator. Use of the proper length positioning pin should be checked upon installation.

7 "SELECTRIC" TYPEWRITER FOOT TO PROTECT DESK – SERVICE TIP

When removing typewriter from bottom case, the new one-piece "Selectric" Typewriter foot can be used for desk top protection.

8 TILT-UP FRONT MOUNTING SCREWS REPLACEMENT

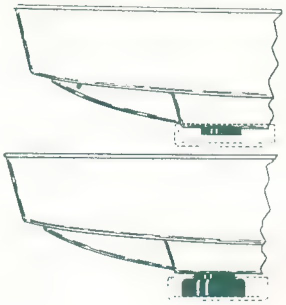
After using the tilt up, be sure to install at least one of the front mounting screws which was removed prior to raising the machine to the tilted position. The installation of this screw is needed to prevent the machine from shifting within its covers if it is ever moved or lifted.

9 TILT UP – SERVICE TIP

Whenever machine tilt up is desired, it may be readily accomplished by removing the two front feet instead of the screws.

10 TYPEWRITER STANDS – INSTALLING MODEL D

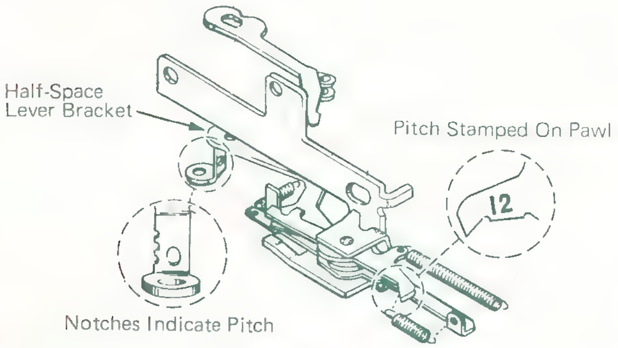
When installing a Model D Typewriter on a frame-type metal stand, a problem can occur with the base feet bracket interfering with the bottom cover. To ensure a solid mounting, install B/M (04-84). This B/M raises the machine 3/8" and allows clearance between the bracket and bottom cover.



ESCAPEMENT

1 ESCAPEMENT BRACKET – PITCH IDENTIFICATION – MODEL D STANDARD (CEM 91)

The pitch of the escapement bracket is indicated in two ways. The pitch number is stamped on the pawl, and notches in the half-space lever bracket (Figure 1) indicate pitch.



(Figure 1)

Notch identification: 0 = 10 pitch, 1 = 8 pitch, 2 = 9 pitch, 3 = 12 pitch, 4 = 11 pitch, 5 = 14 pitch, 6 = 6-2/5 pitch.

2 ESCAPEMENT FAILURES

If experiencing type crowding due to escapement failures, do not overlook the possibility of rough spots on the escapement trip lever stud.

3 ESCAPEMENT FAILURES – ERRATIC – SERVICE TIP

A binding trip link clevis can cause erratic escapement failures. If an elusive escapement problem is noted, spread this clevis slightly.

4 ESCAPEMENT FAILURES – STANDARD AND "EXECUTIVE" TYPEWRITERS

Escapement failures may be caused by the desk pad or the bottom cover (Model C) binding against the mainspring drum gear. On "Executive" ETs a similar binding condition may choke off the interposer links and interposer bellcranks, causing skipping or crowding characters.

5 ESCAPEMENT FAILURES – "EXECUTIVE" TYPEWRITER

Failures may be attributable to a weak, two-unit interposer spring. If you experience this problem, a possible cure would be to add tension to this spring or substitute the three-unit spring.

If it is found that an "Executive" Typewriter is getting only four units of escapement when five (5) pawls are being knocked out, the pawls are probably partially grouped. Check by moving the grouping lever away from the pawls.

6 ESCAPEMENT FAILURES – "EXECUTIVE" MODEL D (CEM 36)

"Executive" escapement failures can be caused by the following: .

1. Bent carriage bed teeth binding on star wheel.
2. Wrong lubrication in the interposer cage assembly. Flush the cage thoroughly with IBM cleaning fluid and relubricate with IBM No. 2 oil.
3. No. 5 escapement pawl too long, causing erratic escapement.

   To diagnose, type a series of three-unit characters. If every fifth character has excessive spacing, and this cannot be corrected through normal adjustments, replace the pawl block assembly.
4. Twenty-inch machines only – plating in rail groove may flake, causing truck rollers to bind.
5. Sound deadening material on bottom panel may contact the interposer links. If this happens, remove sound material ONLY in the area of the links (Figure 1). New bottom panels have material removed in the link area.

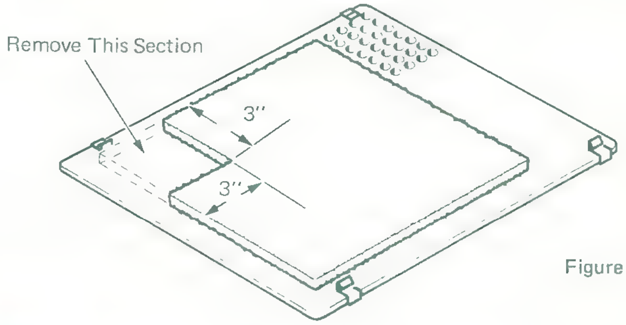


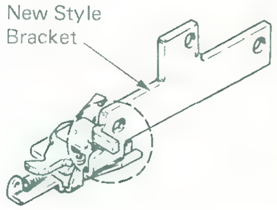
Figure 1

7 ESCAPEMENT PAWLS – "EXECUTIVE" TYPEWRITER – SHOULD BE WASHED

All "Executive" Typewriter escapement pawls should be washed before assembly. This applies with new parts as well. Some escapement failures, immediately after the installation of new parts, have been traced to sticky pawls.

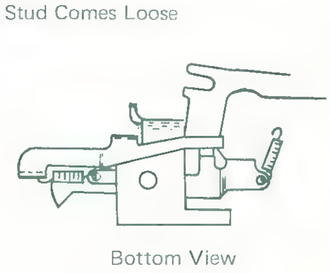
8 ESCAPEMENT PAWL BRACKET – MODIFIED (CEM 72)

The Model D standard escapement pawl bracket has been modified in order to eliminate a roll pin from the rear rail. Replacement of an old-style pawl bracket will necessitate removing the roll pin from the rear rail.



9 ESCAPEMENT PAWL MOUNTING STUD – LOOSE – MODEL D STANDARD (CEM 132)

Some machines have been shipped to the field with improperly heat-treated pawl mounting studs. These studs may come loose after a few hours of machine usage. If a loose mounting stud is found, replace the entire escapement bracket assembly (06-304).



10 ESCAPEMENT RACK – REPLACEMENT

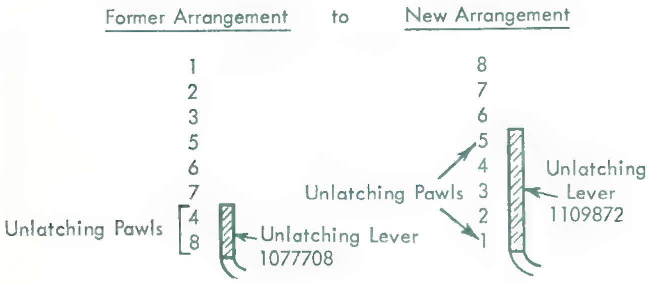
When replacing escapement racks on Standard or "Executive" Typewriters, any roll or dowel pins should be removed. The pins are used to facilitate manufacturing and are not necessary for escapement rack replacement.

11 FRAYED OR WORN TAPES

Carriage return and carriage tension tapes can cause escapement and other carriage movement-associated problems. A check for frayed or worn tapes should be included in your inspection procedure.

1 PAWL ARRANGEMENT CHANGED

The Models A and B "Executive" Typewriter nonfloating escapement pawl block assembly has been changed to the same arrangement as Models C and D floating pawl block.



This change allows the use of grouping unlatching lever in all assemblies.

2 U-BAR ADJUSTMENT

When a U-bar requires adjustment on a standard model, a good technique that doesn't require removal of the centrifugal governor or tipping the machine on its back is as follows:

1. Remove the platen and deflector.
2. Position the carriage so the U-bar adjusting screw can be seen through one of the holes in the inner carriage.
3. Insert 1/4" end of the 1/4" X 5/16" open wrench into the hole and onto the hex head of the screw.
4. Move the carriage to the left or right and you will have enough wrench movement to loosen and tighten the screw.

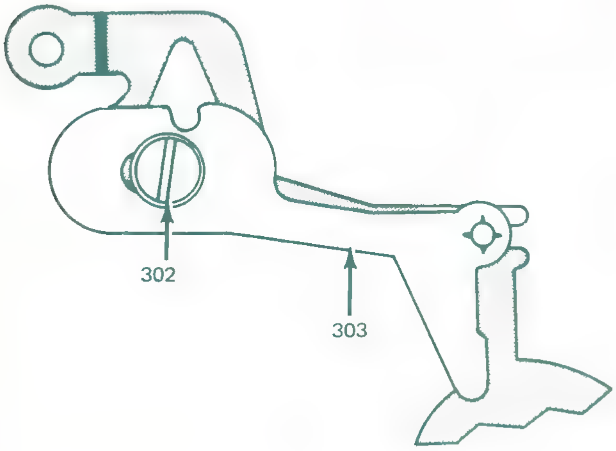
3 PAWL ALIGNING LEVER – ADJUSTMENT (CEM 81) (2/71)

On "Executive" Typewriters with the "simplified" escapement pawl block, it is possible for the pawl aligning lever to get behind the aligning lugs on the pawl tails when the escapement pawl clearance is excessive on either tab, carriage return, or hand carriage release. To eliminate this possibility, the clearance should be adjusted to the low side of the specifications [.015"-.030" (0.38-0.76 mm)].

4 NEW-STYLE HALF-SPACE MECHANISM

Redesigned to facilitate manufacturing.

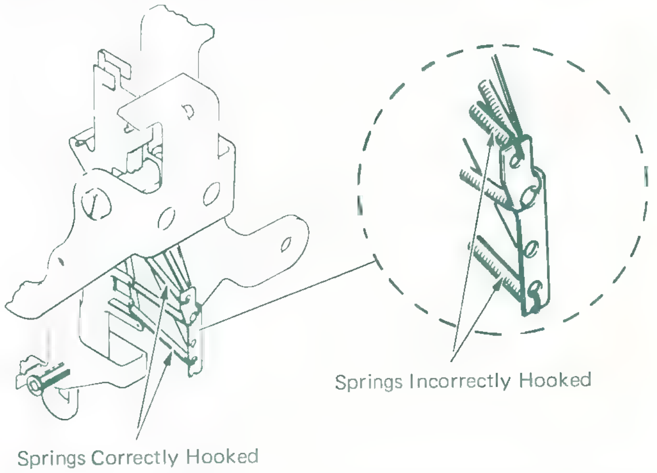
The old-level half-space adjusting lever and mounting studs are not compatible with this change. When ordering an escapement pawl bracket assembly (06-304) for machines below S/N: 6230088, also order new-level half-space adjusting lever and mounting stud.



ESCAPEMENT CONTROL

5 ESCAPEMENT EXTRA UNITS

If experiencing one extra unit of escapement, check the mounting of the interposer restoring springs on the interposer cage. They should be connected from the side as illustrated. This problem is peculiar to 1/32 pitch machines and occurs most frequently on three-unit operation.

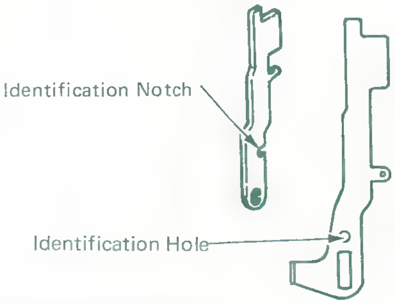


6 INTERPOSER IDENTIFICATION (CEM 57) (CEM 125)

"Executive" interposers are marked with identification "holes" or notches.

Identification Codes:

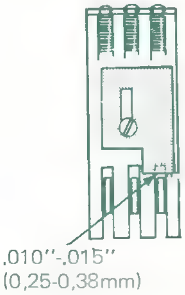
None – 1/32 pitch
One – 1/36 pitch
Two – 1/45 pitch



7 MALSELECTION REMEDY – 5-UNIT

When experiencing 5-unit malselection, do not overlook the possibility of the 5-unit interposer selector bail restoring too far to the front of the machine and sticking. To prevent this condition, install the 5-unit bail stop.

The 5-unit bail stop should be positioned with the bellcrank guide bracket screw so that when the 5-unit bail is at rest, there will be a clearance of .010"-.015" (0.25-0.38 mm) between the 5-unit bellcrank and the 5-unit bellcrank stop.



8 SELECTOR BAIL MOUNTING PLATE STUD – REDESIGNED (CEM 64) (8/70)

To facilitate assembly. The selector bail mounting plate stud now incorporates a 6-40 thread. The mounting holes in both side frames have been tapped to accept the new stud. Standard and "Executive" Typewriters now use the same side frames.

FRAMES

1

TENSION TAPE PULLEY GUARD LUG — REPLACEMENT (CEM 115) (6/73)

The tension tape pulley guard lug which is part of the power frame is NOT formable. If an attempt is made to form it, it will break.

If the lug is inadvertently broken off, one way it can be replaced is by ordering bracket (Models A and B — 05-15) (P/N 1071209). Remove the pulley from this bracket and cut off the bracket one-fourth inch below the pulley mounting hole. Mount the section of the bracket with the guard lug to the power frame using the pulley and stud from the machine.

NOTE: The hole in the bracket may have to be enlarged slightly.

GOVERNOR, DECELERATOR AND MAINSPRING

2

CENTRIFUGAL TAB GOVERNOR COVERS TIGHT

A method for easy removal of the centrifugal governor cap is to use a drive belt turned wrong side out and held tightly around the cover.

3

DECELERATOR DRUM GEAR CAN CAUSE ESCAPEMENT PROBLEMS

An eccentric decelerator drum gear can cause escapement problems. Check to ensure no binds exist between it and the governor pinion gear.

4

DECELERATOR FAILURE — CHECK GOVERNOR COLLAR

What may appear to be intermittent decelerator failure (carriage returning hard; no governor action) may actually be a loose governor pinion gear.

5

ESCAPEMENT FAILURES

An overtightened governor cap will deform the rubber seal enough to contact the governor arms causing subsequent escapement problems.

6

MAINSPRING TENSION CONTROL

Whenever it is necessary to remove the carriage tension tape from the spring drum, the following procedure may be used. Attach a 30-inch carriage tension tape to an adjacent drum lug before removing the tension tape. In this manner, it will be possible to control the unwinding of the mainspring with no danger of the drum slipping from your grasp.

When the mainspring is to be wound again, simply pull on the extra tension tape. This method assures the same carriage tension as before the mainspring was unwound.

7

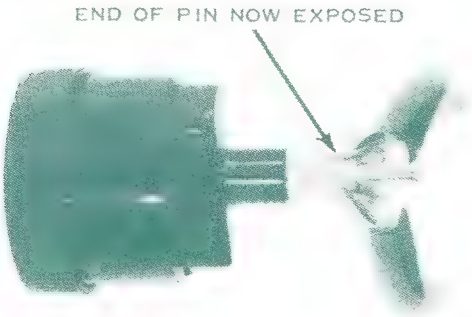
NO DECELERATION

If little or no deceleration seems to be a problem, move the decelerator spring clip to the other end to improve decelerator action.

8

ROLL PIN REMOVAL — CENTRIFUGAL GOVERNOR PINION GEAR

The roll pin may easily be removed from the pinion gear by squeezing with the diagonal cutters as shown below. This will raise one end of the pin far enough to be pulled out of the gear hub. The replacement gear may then be easily installed.



9

TENSION TAPES COMING OFF PULLEY

To prevent carriage tension tapes from coming off the tension tape pulley, a "C" clip, or a grip clip, may be installed to the rear of the pulley on the power frame boss.

HEKTOWRITER

1 HEKTOWRITER RIBBONS – DISCONTINUED (CEM 137)

Hektowriter ribbons are no longer manufactured. Customers should be advised that these ribbons are no longer available from IBM.

Should a customer desire to have the attachment removed, Customer Engineering will do so only on a billable basis.

2 INCREASING HEKTOWRITER RIBBON FEED

When unable to obtain sufficient ribbon feed on the Model D Hektowriter, and all adjustments are correct, try the following: Move the actuating lever assembly 1/2" towards the front of the machine. This can be done by using a No. 2 drill to relocate the mounting holes for the two mounting screws. Replace the link with a shorter link (P/N 1077880). Now, adjust the feed as usual. This will approximately double the amount of ribbon feed available.

NOTE: When the actuating lever is moved towards the front of the machine, it is possible for its finger to contact the power frame casting. If this occurs, use the round file to remove the obstructing portion of the casting.

3 CARRIAGE BIND – B HEKTOWRITER

A hard-to-find bind in the Hektowriter auxiliary carriage may be caused by a flat having been worn on the center rollers when a binding condition occurs. Replacement may be necessary.

KEYBOARD LOCK AND BELL

5 LOUDER BELL

If a louder bell is desired by the operator, install a washer from Parts Packet No. 8 between the bell and tab check lever keeper. Also, check to see if the backspace pawl link is touching the bell as this will tend to muffle the sound.

6 OVERPRINTING AT RIGHT MARGIN

If a timing condition exists between the operator and the machine at the right margin, replace the rear linelock link with a spring. This can be made by cutting a 1-1/4" piece from a typebar rest pad spring.

In many cases an operator will release a key at the time when the linelock bail contacts the keylever. This partially depressed keylever will prevent the linelock bail from operating and permit overprinting.

7 LINELOCK QUICK ADJUSTMENT

On Model C ETs equipped with removable keyplates, it is easier to make linelock adjustments from the front of the machine. Remove the keyplate and form the lug on the linelock with a T-bender. This saves rear cover removal and clevis adjustments.

8 SHIFT LOCK SPRING/ LINELOCK BAR INTERFERENCE – SERVICE TIP

If shift lock spring interferes with the linelock bar, the bar can be repositioned slightly by installing "C" clips or washers on shaft between linelock bar and linelock bushing.

9 SPACEBAR – PREVENT LOCK-OUT (CEM 97) (2/72)

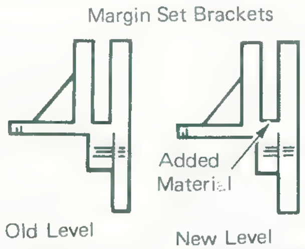
The spacebar lock-out lug on the linelock bar (09-4) may be formed to prevent locking out the spacebar when the machine is turned off. This will prevent the spacebar from snapping out of the retainers on late-level Model D Typewriters or from bending the trip lug on early-level machines when the spacebar is depressed while the machine is OFF.

MARGIN, LINELOCK AND BELL

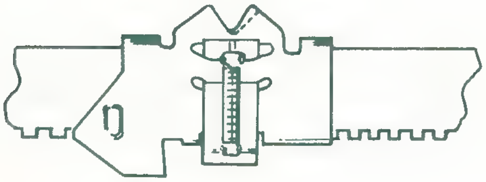
1 MARGIN SET MECHANISM – MODEL D

(CEM 88) (6/71)

Margin reset problems on Model D typewriters may be substantially reduced if the following steps are taken, particularly on machines used in typing classes:



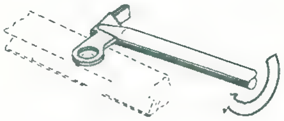
1. Replace the margin set link and bellcrank, if needed, with the new-style parts to correct clevis disengagement from either the button or the bellcrank.
2. Replace the margin set bracket (P/N 1115572) to prevent breakage. Current level parts have been redimensioned for stress relief.
3. Install multi-tooth sliders and margin stops.
4. File or stone the right side of the "V" slot in the LH margin so while holding the margin reset button down and move the carriage to jam the margin stops, the pin in the reset lever will cam out of the slot in the margin stop. Current level margin stops are designed this way.
5. Check all margin set adjustments, Adjustment Parts Manual frames 240-245.



5. Check all margin set adjustments, Adjustment Parts Manual frames 240-245.

2 MARGIN RELEASE ADJUSTMENT MODEL D

If a margin release cannot be adjusted sufficiently to allow the margin control lever to reliably clear the margin stop, the tab latch may be restricting the tab lever. The tab latch can be formed down slightly in the area shown to give the desired clearance.



3 MARGIN SET LINK AND BELLCRANK NEW STYLE

(CEM 27)

In situations where the margin set link continually disengages from either the button or the bellcrank, the new-style link* and bellcrank† should be installed. However, do not interchange parts as the old-style bellcrank is not compatible with the new-style link.

4 MULTI-TOOTH SLIDER ON BROKEN RACK

When a tooth breaks off a margin rack using a single pin slider and margin stop, try a multi-tooth slider and stop until the rack can be replaced. It may save the customer some "down time."

MOTOR AND DRIVE

5 SAFETY EXPOSURE

(CEM 161) (12/76)

Some early level two-wire Model C typewriters (Standard below S/N: 227675 and "Executive" typewriters below S/N: 2032131) have the green wire (ground) from the inner plug cut and capped. This wire must not be reconnected to ground. The inner plug may be shorted internally (Figure 1).

When the machine requires grounding, current level 3-wire linecord B/M must be used [8' cord, 13' cord (11-118)].

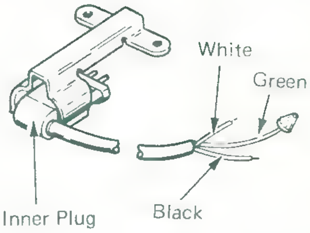


Figure 1

NOTE: The cut wire should be placed under the motor leads so it will not interfere with the decelerator arm.

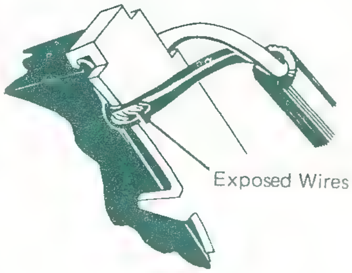
6 ON/OFF SWITCH – DAMAGED WIRE

(CEM 74) (12/70)

ON/OFF switch and lead wires. During typewriter manufacturing a lead wire of this switch may have been damaged by a rough side frame. This damage could result in an exposed right rear wire in the area where the lead wires enter the switch.

This condition can be observed by tilting the machine up and observing the switch wires from the bottom.

Exercise caution when removing a switch as this damage can occur if the side frame is rough.



7 LINECORD REPLACEMENT

(CEM 73) (12/70)

Any damaged linecord, plug, machine receptacle or lead wires.

The use of a replacement type plug is not authorized on OPD typewriters. Double insulation standards applying to current production machines require a molded plug at the end of the linecord.

The same diameter cord must be used for replacement. The former level large diameter cord cannot be replaced with the current level smaller diameter cord. There is insufficient insulation on the smaller cord to allow a safe installation without the use of the molded strain reliefs made on the exact replacement cord.

Linecord restraining clamps should hold the linecord securely. They should be replaced if necessary, not formed to meet this condition. Care must be taken to route the wires to prevent their contact with moving parts.

Taut linecords can cause damage to cord insulation, resulting in a potential safety hazard. Leave sufficient slack in linecords to allow the machine to tilt up.

1 BINDING MOTORS – MODEL C

Occasionally the motor bearings will bind on ETs recently installed. In most cases this is due to improper alignment of the self-aligning bearings and can be corrected by giving the motor a sharp tap on the end of the shaft.

2 DOUBLE POLE SWITCH – LEAD REMOVAL

The leads may be removed from the double pole switch by inserting the smallest splined wrench alongside the wire to release the gripper.

3 CLUTCH PAWL NOISE

To reduce noise of the motor clutch pawls on extremely noisy motor clutches, replace the nylon spacers with the bowed washer. The bowed washer is located in Parts Packet No. 8.

4 END BELLS – REMOVING FROM MOTORS

After removing the end bells from any motor, check the motor leads for possible breaks in the insulation. There is a possibility that the insulation can be broken when the end bell snaps loose from the motor housing.

5 LINECORDS – BROKEN WIRES (CEM 128)

Some machines may have been shipped to the field with broken wires in the linecord. If a broken wire is suspected, unplug the machine and make a continuity check while flexing the cord in the area of the molded plug. If a broken wire is found, replace the linecord.

6 MOTOR MOUNT REPLACEMENTS

Motor mounts may be quickly replaced by the following procedure:

1. Unplug the machine.
2. Remove the rear cover, motor pawls, pulley and belt.
3. Use screwdriver and duckbills to remove the left mount.
4. Put the machine on its back and with the bottom panel removed, move the motor to the left and remove the right mount.
5. Keep the motor to the left; slip on the new right mount. Move the motor to the right.
6. Set the machine down. Slip the new left mount over the shaft. With one hand on the motor shaft, the motor can be moved up and down, forward and backward while working in the left mount.
7. Replace the pulley, pawls and belt. Adjust as needed.

7 MOTOR MOUNTS – VIBRATION – MODEL D (CEM 154)

Some Model Ds have reached the field with hard motor mounts that could cause vibration and noise. These motor mounts are stamped with the letter "J."

NOTE: Also check the drive and driven belt tension adjustment.

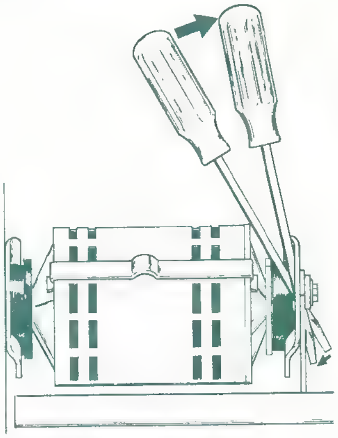
8 MOTOR PULLEY – BINDING – MODEL D (CEM 147)

Some 14- and 15-tooth motor pulleys (11-104) have excessive plating which could cause a bind on motor shaft and machine lockup. To correct, remove pulley, flush and lubricate with No. 10 oil. If binding condition still exists, replace pulley.

9 MOTOR REMOVAL – MODELS B AND C

REMOVAL PROCEDURE:

1. Remove the rear cover and motor pulley.
2. Tilt the machine on its back and remove the bottom panel.
3. Insert the blade of the large screwdriver between the right motor clamp and the right end of the motor.
4. Gently pry the clamp to the right and the motor to the left. At the same time, work the motor out until it is clear of the right clamp.
5. Remove the motor from the machine.
6. To install a new motor, insert the left end first, then the right end.
7. Be sure the motor leads are stretched tight.



10 MOTOR REPLACEMENT – INSTALL VINYL TUBING

When replacing a motor, be sure to install vinyl tubing over motor lead wires.

11 POWER ROLLS – CARE IN HANDLING

Occasionally power roll shaft seems to be too large to fit into the power roll bearings. This is the result of tiny nicks or burrs on the shafts caused by rough handling. Light filing of the ends of shafts will remove this type of flaw and should be tried even if the shaft appears to be undamaged. Use care in handling and storing power rolls to avoid damage.

12 POWER ROLL STORAGE

It is recommended that power rolls be stored in a vertical position. A temporary flat surface "set" may result if power rolls are stored in a horizontal position. This "set" can result in unevenness of impression immediately after installation.

13 POWER ROLL REMOVAL AUTOTYPE

The following procedure can be used to remove a power roll from Model C ETs which are installed on autotypers, eliminating the need of removing the bottom cover.

1. Remove the top cover and keyplate.
2. Remove the ribbon feed mechanism (new style).
3. Latch the carriage return.
4. Set the typewriter on its back.
5. Remove the power roll pulley.
6. Remove the ribbon lift link.
7. Remove the three power roll bearing screws (with offset screwdriver).
8. Remove the ribbon rewind wheel (old style).
9. Remove the power roll bearing from the power roll.
10. Grasp the power roll and move it to the left.
11. Pull the right end down and remove the power roll.
12. Reverse the procedure to install the new power roll.

14 POWER ROLL SHAFT GREASE

Both shafts of the power roll are grease coated for rust prevention during storage. REMOVE this coating from the right shaft when installing, to prevent grease contamination of the carriage return disc.

1 SHADED POLE MOTOR CLUTCH INTERFERENCE

On some Model C ETs when the carriage is moved to the left, the rubber feet may compress and allow the motor clutch to touch the LH tilt-up track. This same condition may occur during tab/carriage return operation if the motor mounts should flex downward. In most cases, the cause of difficulty is due to the track being too far inboard and can be remedied by moving the track to the left as far as possible in its mounting holes. In some cases, there may be a flash along the boss which positions the track. This flash should be filed off. Some CEs have been filing a larger relief in the track to provide clearance for the motor clutch. This is only necessary when the belts have stretched and the motor and intermediate pulley are adjusted all the way to the rear. The relief in the RH track has been enlarged an additional .030" (0.76 mm) for an extra safety factor on clearances.

When adjusting the motor clutch spring washer tension, the clutch hub should be positioned to compress the spring washer so that the starting click of the motor pawls is barely audible, yet allowing the pawls to safely disengage when the motor is turned off while heavily loaded. A good way to check this adjustment is to engage the carriage return while holding the carriage, then shut off the motor. The clutch pawls must disengage.

2 SHADED POLE MOTOR – LUBRICATION

It is recommended that the Models C and D shaded pole motor bearings be lubricated with No. 10 oil every six months, rather than once a year. The increased operating temperature of this type motor decreases the life of lubricants. Lubrication intervals for the motor shaft and centrifugal clutch assembly remain unchanged.

3 SWITCH LEVER SPRING INTERFERENCE – AUTOTYPIST

Model C ETs installed on Autotypist machines may experience interference between the switch lever spring and the hook wire guide rod of the Autotypist. (Relocate the switch lever spring or shorten the guide rod to eliminate this interference.)

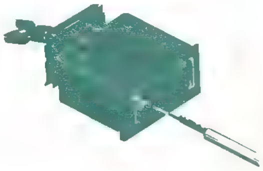
4 VOLTAGE AND CURRENT IDENTIFICATION REQUIREMENTS

All Models C and D machines must be equipped with a sticker showing voltage and current requirements. The part numbers for the stickers are shown in the C and D Parts Catalog, Mech. 04. These stickers can be used on machines with any voltage, but the voltage requirements must be written in.

5 "QUICK-WIRE" SWITCHES – LOOSE WIRES (CEM 129)

Safety Location: ON/OFF switch. Many switches used on late model "Selectric" and Typebar typewriters and other OP equipment incorporate the "quick-wire" connection feature.

Safety Precautions: When experiencing electrical or switch problems, the possibility exists that the wires are not being held firmly in place by this "quick-wire" feature.



CAUTION: Before checking this connection, remove power by unplugging the machine. Pull on each of the 4 wires – they should remain firmly locked in the switch. If any of the 4 wires are not held firmly, the switch should be replaced.

NOTE: The remaining wires can be removed by inserting a small splined wrench (or similar tool) into the switch beside the individual wires.

6 GENERAL ELECTRIC MOTOR – CAPACITOR TYPE – MOTOR LEADS WORN (CEM 157)

Safety Location: Where leads are held in place by nylon wire ties (Figure 1).

Safety Precaution: The possibility of an electrical hazard exists on all General Electric capacitor type motors that have a nylon wire tie around the motor leads where they leave the motor end bell. It is possible that the insulation is worn in the area where the wires contact the end bell under the nylon tie.

Safety Corrective Action: On next service call or before 10-31-76, check all motors in the affected machine serial number range. If nylon tie is present, motor must be replaced. This applies to SA and per call machines.

CAUTION: Disconnect power from machine before working in the area of the motor.

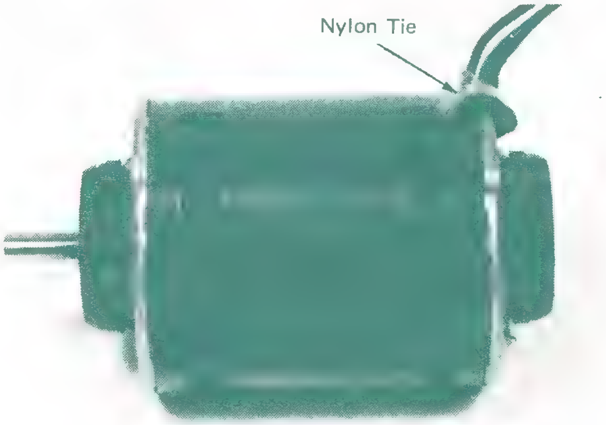


Figure 1

7 MOTOR – ELECTRICAL HAZARD – MODELS A, B AND C (CEM 114)

Safety Location: A potential safety hazard exists on all capacitor type, R & M motors with flywheels. These motors have 3 wires protruding from the motor and were used in production, and as replacement parts up to 1966. Some of these flywheels have already been removed due to a noise problem. The flywheels when loose can cause a direct short to the motor housing. A baffle on the inside of the end head on the opposite end of the motor may also be loose. Motors in this category must have the flywheels and loose baffles removed on the next service call or inspection. If necessary, replace the motor.

Shaded pole motors (2 wires extending from the motor) have a fan on the right side. These motors **do not** present a hazard and the fan is **not** to be removed.

Safety Corrective Action: Visually inspect the machine for the following conditions to identify the flywheel type motor:

1. Motor will be capacitor type (3 wires protruding from the motor).

   NOTE: If capacitor type, UNPLUG MACHINE before continuing. The motor housing may be electrically energized and the single pole switch will not isolate it.

2. Motor will be an R & M manufactured motor.
3. Look for a flywheel on the left armature shaft (Figure 1).

   NOTE: Some R & M motors were manufactured without flywheels and some flywheels have been removed.

(Continued On Next Page)

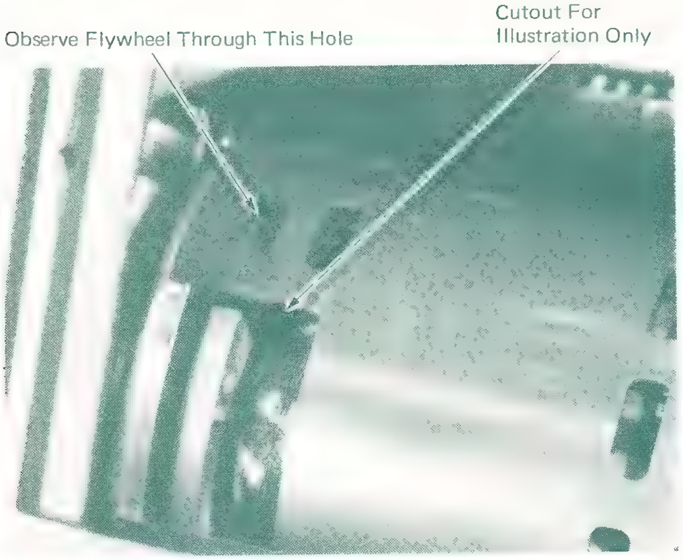
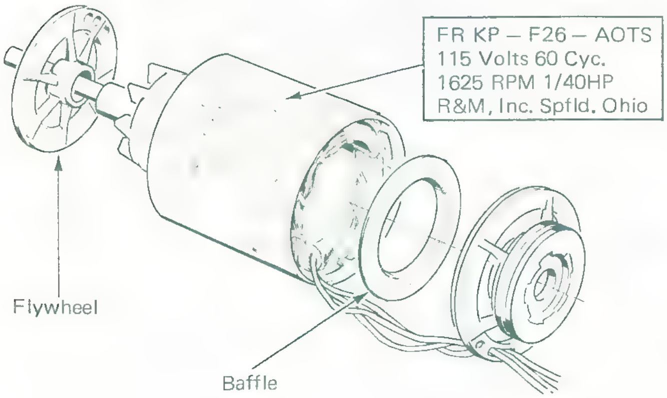

Observe Flywheel Through This Hole
Cutout For Illustration Only

Figure 1

Procedure for removing flywheel:

1. Machine MUST be unplugged.
2. Remove motor, scribe end heads, and disassemble.
3. Pull or tap the flywheel off the armature shaft.
4. Remove any loose baffles.
5. Clean the bearing surfaces and relubricate; reassemble the motor; install new motor mounts; and reinstall the machine.



1 MOTOR GROUNDING SCREW – 3 WIRE MOTOR – POSSIBLE SAFETY HAZARD – MODEL D (CEM 65)

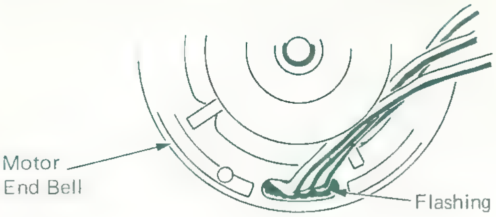
There is a potential safety hazard with the motor ground wire screw. A longer screw was substituted during manufacture of some machines and **MUST** be replaced. Some motors may have been installed so that the tip of this screw can contact the motor winding. Replace the screw with screw (P/N 738378) and washer (P/N 56079).

2 MOTOR LEADS WORN – CAPACITOR TYPE (CEM 126)

Safety Location: Motor end bells where leads enter.

Safety Precaution: A potential shock hazard exists on some capacitor type motors that contain flashing on the end bell. This flashing through vibrations, etc., could wear through the insulation on the leads causing a bare wire to contact the motor housing.

Safety Corrective Action: On the next service call or inspection, examine the motor where the leads enter. If flashing is found, remove it. If the insulation is damaged, replace the motor.



CAUTION: Unplug the linecord before working in the area of the motor.

3 LINECORD WEAR – C AND D DECIMAL TAB (CEM 109)

A short area of the linecord contacts the rear frame in the area of the linecord retainer. Vibrations, etc., could cause the linecord to fray or possibly wear through the insulation. Tie the linecord to the linecord retainer using a plastic wire tie.

4 LINECORD CLIPS – MODEL C (CEM 110)

Safety Location: Female end of detachable linecord.

Safety Precautions: If the linecord becomes slightly loose, a dangerous fire and/or shock hazard could exist.

Safety Corrective Action: A linecord clip (11-95) must be installed on all machines with a detachable linecord. Clips are available for different rear frame design. See Figures 1 and 2 for proper style clip.

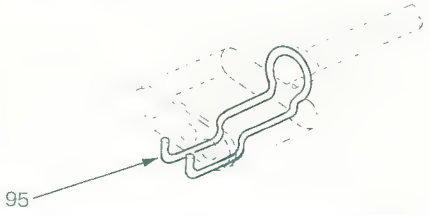


Figure 1

Use On Machines With Stamped Steel Rear Frame

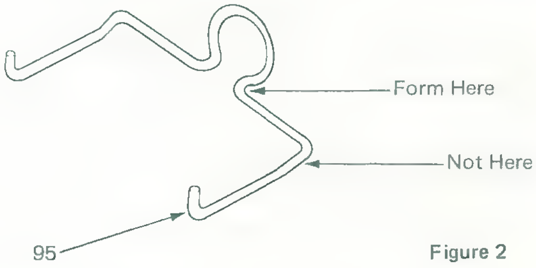


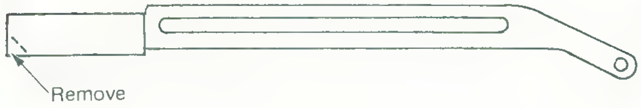
Figure 2

Use On Machines With Die Cast Rear Frame

NO PRINT

1 INTERFERENCE BETWEEN NO PRINT ANVIL AND NO. 43 TYPEBAR

If the no print anvil interferes with the operation of the No. 43 typebar, the lower LH corner of the anvil must be removed with side cutters.



OPEN-END CARRIAGE

1 IMPROVED OPEN-END CARRIAGE

Marking on double-coated paper due to the paper contacting the paper guide assemblies and bail arm assemblies.

Install the nylon tensioners, nylon bail rolls and nylon inter-paper guide.

Adjust the nylon tensioners and nylon inter-paper guide to prevent the paper from contacting the paper guide assemblies (Ref. 224), bail arm assemblies (Ref. 149), and bracket and guide (Ref. 223).

2 PLATEN REMOVAL ON OPEN-END CARRIAGE

The next time you have to remove the platen from an open-end carriage machine, try this procedure:

1. Remove platen knobs and bearings.
2. Loosen screw and remove ratchet detent assembly and lower platen variable lever out of the way.
3. Loosen setscrews and slide the RH platen collar and platen bushing to the right.
4. Remove the four clutch cover screws and take out ratchet driver shaft and assembly.
5. Move the carriage all the way to the right and remove right end of platen toward the front of the machine. It may help to remove the RH cardholder.
6. To reinstall, reverse this procedure and adjust position of platen left to right.

PACKING SUPPLIES AND INSTRUCTIONS

1 POSSIBLE ELECTRICAL HAZARD – MODEL D

Care should be taken when unpacking typebar machines. The metal brackets used to secure the carriage during transportation may drop into the typewriter and short the motor housing to the machine frame.

Metal objects on the motor housing and touching the machine frame prevent machine from meeting double insulation standards. A quick visual check of electrical components should be made when inspection or service calls are performed.

2 REMOVAL OF PACKING PART DURING INSTALLATION OF DECIMAL TAB MACHINES (CEM 99) (2/72)

With the newly redesigned parts associated with the center underscore decimal tab, it is possible for the decimal tab keylever bellcranks to become unhooked from their mounting shaft during shipment.

The plant is now installing a shift grommet under the interposer cage to prevent this movement. This grommet **must** be removed during installation; otherwise the interposers will not operate.

A white plastic cable tie is being attached to the grommet for visibility and easy removal.

PLATENS

3 LINESPACING FAILURES – 66T RATCHETS

Some linespacing failures on 66T ratchets can be traced to a blunt index pawl. Stoning the point to a sharper edge will aid in correcting this trouble.

Also, for correcting linespace trouble on any ratchet, using the heavy 66T detent spring may help.

4 PLATEN CLUTCH REMOVAL

Whenever the clutch cover is removed from a platen, it should be marked to ensure that it will be replaced in the same position. If the cover is not replaced in the same position, the platen may be eccentric.

5 PLATENS NOT COMPATIBLE WITH "D" PLATEN KNOBS

Old-style platens with the screw-on platen variable button cannot be used with Model D platen knobs. The platen variable button cannot be depressed. Use new-style platens on all Model D Typewriters.

6 PLATEN IDENTIFICATION

The location of the stamped code for rubber hardness identification has been moved from the left end of the platen rubber to the right platen end plug to provide an identification that is more legible. All platens, except pin feed platens, will carry the new identification.

7 PLATEN KNOBS – BLACK – MODEL D

New machines will be equipped with black platen knobs. Only black knobs will be available for field replacement. When replacing other than black, both right and left platen knobs should be ordered.

8 PLATEN RATCHET SLIPPAGE

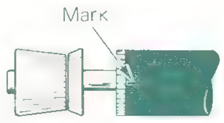
Platen ratchet slippage may be caused by incompatible platen ratchet drivers, shaft and ratchets. Potential slipping ratchets may be identified by holding the platen ratchet firmly and twisting the platen. Release the platen variable button and test at three or four locations. Protect the hand holding the ratchet wih a clean shop cloth.

Ratchet slippage may be corrected by one or more of the following techniques:

1. Replace ratchet driver.
2. Replace retainer.
3. Increase tension on the platen driver springs.
4. Add shim washers (P/N 1078497) between the driver and cover to provide maximum driver and ratchet engagement with minimum end play.

9 PLATEN RATCHET SLIPPAGE

To check for platen ratchet slippage on platens with the one-piece platen ratchet, mark the platen and the tooth and repeat linespace. If the marks separate, the ratchet has slipped.



10 PLATEN STORAGE

If you carry or store platens in your car, leave them in the shipping cartons to prevent them from being damaged.

1 PLATEN SWELLING

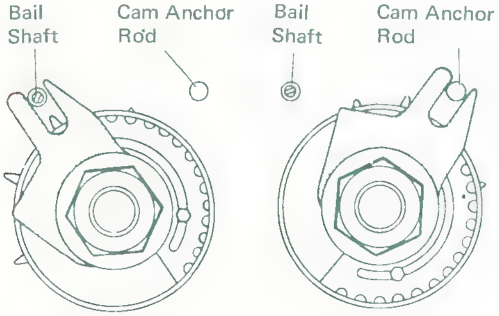
Platens may be affected by the chemicals used in some brands of carbonless carbon paper. For machines using this type paper extensively, a No. 9 platen may be required to prevent swelling. Use of bond paper or similar backing on machines using this paper intermittently will help reduce the effect on the platen.

2 PLATEN VARIABLE BUTTON REMOVAL – MODEL C

The utilization of the smooth side of a cog belt makes the removal of the Model C platen variable button an easy matter. This is accomplished by wrapping the belt around the button and gripping the belt in the same manner used to loosen the centrifugal governor cover.

3 CHANGING FROM NON-PIN FEED TO PIN FEED

Operators using Models A, B or C pin feed attachments occasionally desire to change quickly from pin feed form to a non-pin feed form without changing the platen. This may be accomplished by adjusting the pin wheels for full extension in the form when the pin feed yokes are on the bail shaft. The yokes may then be moved back to the cam anchor rod when it is necessary to type a non-pin feed form.

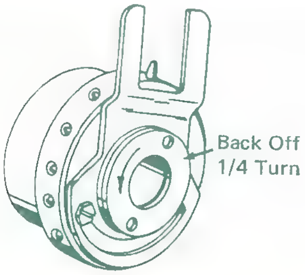


4 FEED ROLLS FAIL TO STAY DISENGAGED

If the feed rolls fail to stay disengaged on a pin feed platen, add a second feed roll release retainer spring on top of the present. This increases the pressure supplied to the bellcrank.

5 PINWHEEL BINDS – PIN FEED PLATEN

Sometimes binds occur in the pins of the pinwheel assemblies. These binds may often be overcome by loosening the inner plate, as illustrated.



This plate is threaded and may be backed off 1/4 turn with gas pliers to open up inside clearances in the assemblies.

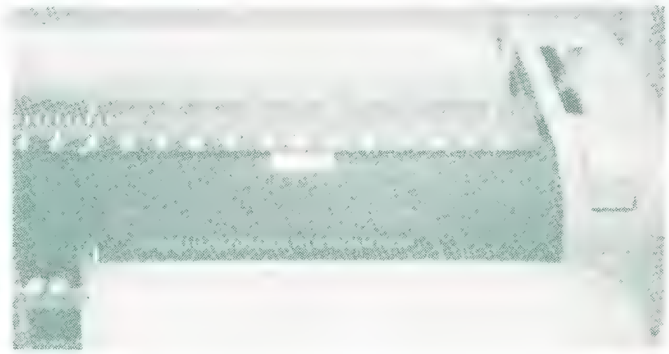
CAUTION: Do not remove this plate from the assembly as it is difficult to replace.

6 PLASTIC FEED ROLL RELEASE BELLCRANK – GRIND WHEN USED ON PIN FEED PLATEN ETs

The right, rear corner of the plastic feed roll release bellcrank must be ground off 1/8"-3/16" (0.125-0.187 mm) when installing the bellcrank on pin feed platen ETs. An unmodified bellcrank will fail to fully restore because it hits the right-hand guide of the form guide.

7 VISIBLE INDEX SERVICE HINT

On ETs with a visible index attachment, a mark on the platen will save the operator a lot of time when setting up to type cards. The mark is used as a reference point and should be lined up with the front of the top scale before locking the sector gears on the platen. This will ensure the same writing line each time the attachment is used.



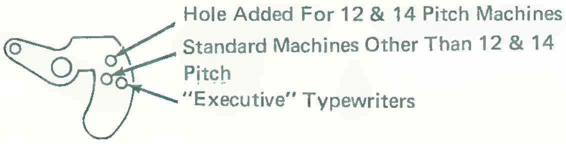
RIBBON, CARBON

1 CARBON RIBBON SERVICE TIP

To prevent the carbon ribbon from accidentally unwinding when making a repair, pull the ribbon follower forward to rest against the side of the ribbon spool hub. This will prevent the supply spool from rotating. Be sure to return the ribbon follower to its proper position after making the necessary repairs.

2 FEED ARM – LOWER – ADDED HOLE

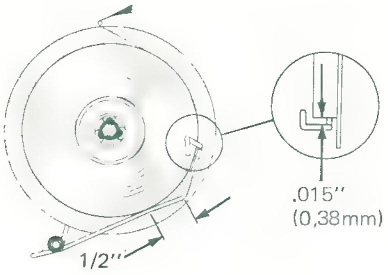
The lower carbon ribbon feed arm now incorporates a third mounting hole for the ribbon feed link. This hole is to be used to eliminate overfeeding of the carbon ribbon on 12 and 14 pitch machines. The drawing illustrates the correct link hole to be used for "Executive" Typewriters, for Standard machines, and for 12 and 14 pitch Standard Typewriters.


Hole Added For 12 & 14 Pitch Machines
Standard Machines Other Than 12 & 14 Pitch
"Executive" Typewriters

3 FEED ERRATIC

If you find erratic ribbon feed occurring only when a new spool is installed, the following fix may be quite useful. Using the 3-prong pliers, form the follower wire so that with a full supply spool, the normal contact area of the wire will clear the spool by approximately .015" (0.38 mm). (See illustration.)

When the spool is full, only this form angle will touch. As the ribbon is used, the follower will move back to a normal contact action.



4 FEED ERRATIC THREE-UNIT RIBBON – SERVICE TIP

When experiencing erratic three-unit ribbon feed, replace the lower feed arm springs with P/N 1154195. This ensures a positive return of the arm before the next feed operation.

5 FEED ROLLER BINDING

Field reports indicate that the carbon ribbon feed roller binds on its shaft when the retaining nut is fully tightened. Remove the flat washer from behind the feed roller spider spring to overcome this condition.

6 PARTIAL CHARACTER PRINTING – CARBON RIBBON MACHINES

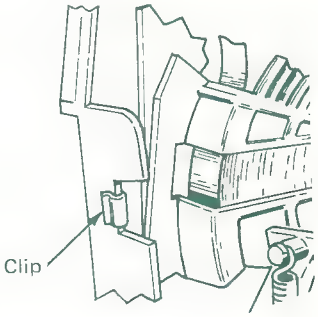
Customers using very large characters (particularly changeable typebars) often get only a part of the character printed. The old method of having the operator insert a piece of carbon paper in front of the special character may not produce the desired result, particularly with the colored film ribbon.

A method of correcting this condition is to reposition the ribbon lift final stop to permit the operator to use the center position of the ribbon control for these characters. This requires the operator to strike the character, backspace, change the ribbon control position, strike the character again, and reset the ribbon control. It should be noted that this method will cause characters to be slightly heavy in the center.

7 RIBBON FEED PROBLEMS – COMPETITIVE CARBON RIBBONS

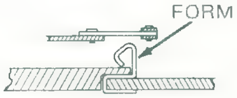
Some competitive ribbon manufacturers are winding their carbon ribbons on thick-flanged plastic spools. When customers attempt to use these ribbons on Model D and late-level Model C Typewriters, ribbon feed failures may occur due to the ribbon spool binding on the ribbon cover plate.

When encountering this problem, you may easily solve it by installing a feed roll clip on the right-hand supply spool mounting plate as shown.



8 RIBBON FEED ERRATIC – "EXECUTIVE" TYPEWRITER (CEM 56)

A possible interference may exist on Model D "Executive" Typewriters in the area of the ribbon selector bracket. Because of a very close condition, the front LH bottom panel clip may interfere with proper ribbon feed. Check for this condition and form the clip for greater clearance.



9 RIBBON FLAKING

Check height of static ground wire. It should be high enough so that it will not catch and be held back by the window in the RH plate. Raise the wire if it catches, as this will cause excessive carbon ribbon dust and flaking.

10 STATIC GROUND WIRE SLIPPING OUT

If you have trouble with certain static ground wires slipping out of the slot at point "A," use the following procedure to fix them: insert a screwdriver at a point midway between projection "B" and mounting screw "C" and push on the wire until it is formed slightly. Now the wire will contact the projection "B" before reaching a point in the slot where it can slip out.

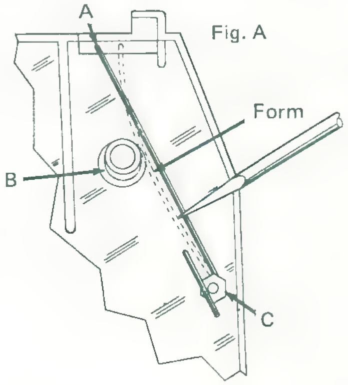


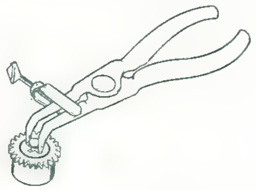
Fig. A

1 SOUND DEADENING MATERIAL CAN CAUSE CARBON RIBBON TAKE-UP PROBLEMS – SERVICE TIP

If you have a call on carbon ribbon take-up, check to see if the sound deadening material on the LH side of the keyplate may possibly be contacting the inner or outer take-up flange. If it is, you will notice a track on the sound deadening material where the flange has been rubbing. Current Model Ds have the material stuck on the keyplate vertically instead of horizontally adjacent to the margin release button.

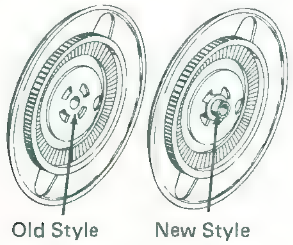
2 TAKE-UP CLUTCH ADJUSTMENT

The take-up clutch can be easily adjusted by using the grip ring pliers. Insert the pliers as shown in the slot and turn the gear for adjustment.



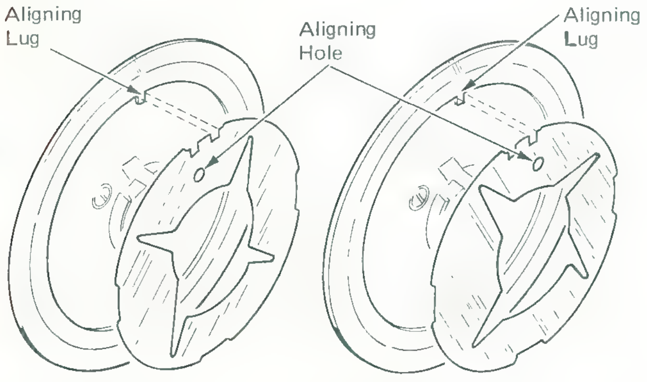
3 TAKE-UP INNER FLANGE COMPATIBILITY

The carbon ribbon inner flange was modified to ensure stability at about the time the Model D was announced. The old flange can be used on late-level take-up assemblies, but the new flange, due to the extrusion, can be used ONLY on the late level.



4 TAKE-UP INSERT – INSTALLATION (CEM 113)

Take-up problems will be encountered if this insert is improperly installed. When replacing an outer flange on carbon ribbon typewriters, the insert must be installed differently for modified and spring drive take-ups. On the modified carbon ribbon machines, the aligning hole on the insert should be forward of the aligning lug on the flange. The insert must be turned over for spring drive machines so the aligning hole will line up with the aligning lug.



Modified Carbon Ribbon Take-Up

Spring Drive Carbon Ribbon Take-Up

5 TAKE-UP FLANGE INCOMPATIBLE

The new carbon ribbon flanges with tapered hubs should not be mixed with the old-style flanges with straight hubs. If it becomes necessary to replace one of the old-style flanges, both the inner and outer flange should be replaced with new-style parts.

6 TAKE-UP CLUTCHES PRE-ADJUSTED

Properly pre-adjusted take-up clutches can be made up ahead of time by using the following procedure:

1. Adjust a separate test clutch and mark it for easy identification.
2. Roll the gear of the test clutch around the gear of the clutch to be adjusted.

If both clutches have the same tension, both gears will turn. If the clutch to be adjusted turns, it has less tension than the "test" clutch. If the test clutch alone turns, the clutch to be adjusted has the most tension. The test clutch can also be used to check the clutch tension on a clutch that has already been installed.

7 TAKE-UP CLUTCH ADJUSTMENT

When adjusting the carbon ribbon take-up clutch, it is possible to use the pusher end of the springhook as an offset screwdriver. Hold the clutch with the springhook and turn the gear for adjustment.

8 TRACKING PROBLEMS

On modified carbon ribbon mechanisms, check the friction lever and RH mounting plate for excessive dirt. Use of non-cartridge carbon ribbons may cause poor ribbon tracking, excessive carbon dust and insufficient feed. Remove dirt with cleaning fluid and check on each inspection.

RIBBON, DUAL

1 DUAL RIBBON REVERSE FAULTY

Faulty ribbon reverse on dual ribbon ETs may come from the carbon ribbon rewind release plate being too close to the left-hand fabric reverse bracket assembly, preventing the reverse cycle clutch from completing. Form the plate away to obtain the proper clearance and check to see that the lower-left ribbon guide does not strike the cover when closed.

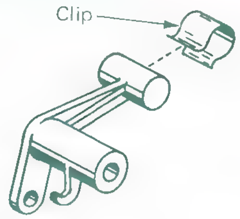
2 INTERMITTENT FEED FAILURE – DUAL RIBBON – MODEL C

Intermittent ribbon feed failure on dual ribbon ETs may be traced to the reverse lever rubbing on the inside of the top cover. Form the lever down so it will just clear the teeth of the ribbon spool.

RIBBON, FABRIC

3 RIBBON COVER INTERLOCK WORN

To quickly fix worn fabric ribbon cover interlock levers, install retainer clip (P/N 1138464) over the worn area as shown.



4 RIBBON FEED FAILURES – INTERMITTENT

If intermittent ribbon feed failures occur, check the clean clip. It may be rubbing against the top cover.

5 RIBBON FEED OPERATING LINK INSTALLATION AND ADJUSTMENT

Installation and adjustment of the ribbon feed operating link, at its connecting point with the ribbon cam, may be readily accomplished by first disconnecting the spacebar operating link at the cam end, and rotating the spacebar cam foward to allow a better view of the hole in the ribbon cam.

6 RIBBON LIFT CHECK – SERVICE TIP

To easily observe high and low ribbon lift trackings, rub the typebar face in question with secretarial correction tape and type a sample. The white material from the tape will show up the typed character on the ribbon.

7 RIBBON LIFT FAILURES

A binding ribbon lift may be caused by poor alignment of the mechanism. To ensure proper ribbon lift action, loosen the two holding screws and apply a slight pressure to the black ribbon lift shaft. The pressure should be toward the right. With the mechanism in this position, tighten the two holding screws.

8 RIBBON LIFT GUIDE ADJUSTMENT

Adjustment of the ribbon lift guide on machines bolted down or operating on autotype applications is facilitated by removal of typebars in positions 21 through 24, which exposes the clevis for adjustment.

9 RIBBON REVERSE FAILURE

Ribbon reverse failures may be encountered on machines with the modified mechanism if the ribbon feed link is maladjusted. Check for the following condition on machines experiencing reverse failures or damaged drive gears.

With the parts at rest and the feed and reverse shaft to the right, the ribbon feed clutch lever must clear the top of the transfer wheel bracket by 1/8" ± 1/32" (3.18 ± 0.79 mm). If the ribbon feed link is adjusted too long, interference will be encountered between the feed clutch lever and the transfer wheel bracket. If adjusted too short, the link drive lever will strike the cam bearing support screw when the cam is on the high point.

10 RIBBON REVERSE FAILURES – INTERMITTENT

Check the cover interlock link. There should be no contact between the link and reverse lever latch with the front cover closed. Form the link to satisfy this condition.

1 RAPID REWIND

Quick rewinding of the positive drive fabric ribbon mechanism, to facilitate checking ribbon reverse adjustments, etc., may be accomplished as follows: Operate the "Ribbon Rewind" button, with the left thumb while pushing the feed gear toward the right with the left index finger.

2 RAPID REWIND – ERRATIC

Check serrated diameter of the power roll pulley for wear, if rapid rewind is erratic. A groove worn around this diameter by the transfer wheel will cause a hesitant rewind.

3 RIGHT-HAND SPOOL MAY HAVE ROUGH EDGES

Increased ribbon life and improved ribbon feed characteristics can be obtained on Model C fabric ribbon typewriters by checking for and removing rough edges or plastic flashing occasionally found on the plastic ribbon spool.

REVERSE LEVER LATCH INSTALLATION

When installing reverse lever latch, on Model C Standard ETs between approximate S/N: 1385679 and 1430917, drill a 7/64" (2.78 mm) mounting hole midway between the existing mounting hole and the keylever fulcrum wire hole. This will permit installation of the new lever on the above S/N ETs without the necessity of replacing the keylever bearing support.

5 COVER INTERLOCK ADJUSTMENT

When experiencing fabric ribbon reverse failures, do not overlook the possibility of the front panel interlock not contacting the actuating interlock lever. Form cover interlock for proper adjustment.

6 DRIVE GEARS

Try this quick method next time you change a fabric ribbon drive and reverse gear. Loosen all the screws on the feed and reverse shaft. As you slide the shaft out, use your letter cam fulcrum rod and follow the shaft out. This will allow you to change the gears without dropping the parts.

7 OBJECTIONABLE IDLE NOISE

Objectionable idle noise may be eliminated by disassembly of the drive gear and relubricating it with No. 23 grease and/or positioning the intermediate gear so that it does not bear down on the drive gear.

8 RED AND BLACK RIBBON TRACKING CHECKLIST

Many stubborn red and black tracking problems may be overcome by referring to the following list of suggested corrections:

1. Raise the corner guides as high as they will go.
2. Make sure there are no binds in the ribbon lift guide.
3. Move pointer as far back as it will go without hitting the front scale.
4. Take all excess play out of lift mechanism.
5. Make sure ribbon vane is straight.
6. Place a 1/16" shim under the rubber stop in the ribbon lift mechanism.
7. If necessary, cut about 1/8" (3.18 mm) off the tip of the position 39 cam to bring the underscore into line.
8. Adjust ribbon drag so that it is equal in both directions. Increased tension of ribbon spool compression spring will improve tracking in most cases.
9. If there is a repositioning indicator, install a plastic shield to stop ribbon from hanging up on wire.
10. Replace ribbon lift bail spring with a heavier compression spring.
11. Test ribbon in both directions.

9 REVERSING FAILURES (CEM 144)

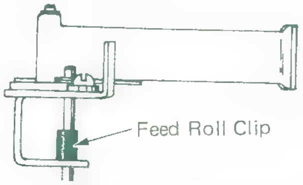
Some fabric ribbons with plastic spools which may cause reversing failures have reached the field. Check the first two winds of ribbon; if sticking to spool, replace the ribbon.

10 REVERSE GATE SLUGGISH

The gate does not always move freely and therefore may not move into the path of the sensing finger. To free up the gate in those cases where the gate pin appears to be too tight in the spool hole, remove the gate; ream out the spool hole with the six flute splined wrench and replace the gate.

11 SENSING FINGER CLIP TO PREVENT BIND – EARLY MODEL C

Ribbon reverse failure on early Model Cs may be traced to the LH sensing finger bracket riding up on its shaft and binding and bending the sensing finger arm. Installation of a feed roll clip (see illustration) will limit upward motion of the bracket.



Type Rest Spring – Model C

12 TRANSFER WHEEL TIRE – DO NOT USE CLEANING FLUID ON FABRIC RIBBON MODEL C

Deterioration can be caused by soaking these tires with IBM cleaning fluid. Cleaning fluid should not be used on these tires. To clean, use clean, dry cloth or replace the tire.

13 RIBBON TAKE-UP CLUTCH STUD – BREAKAGE (CEM 108) (1/73)

When removing or tightening the fabric ribbon take-up clutch stud (13-308), exercise caution as the slotted end breaks easily.

The wearing of safety glasses and the use of a shop cloth to cover the part is recommended to prevent injury.

SHIFT

1 SEGMENT – SPRING BREAKAGE – MODEL D (CEM 121)

Some Model Ds were shipped to the field with rough edges on the segment support where the springs are mounted, causing segment guide spring breakage.

Use a file to smooth the edges of the segment where the springs are mounted.

2 SHIFT FAILURE

Occasional shift failure may be traced to binds in the shift toggle links. If this condition exists, lubricate the lower link bearing surface with IBM No. 23 grease and the mounting stud with IBM No. 10 oil.

3 SHIFT LOCK FAILURE TO RESTORE

Occasional shift lock failure to restore on "Executive" Typewriters may be traced to excess end play in the 5-unit selector bail interfering with movement of the shift lock. Forming the shift lock lug slightly to the right, away from the selector bail, will correct this condition.

4 SHIFT STOP SCREW ADJUSTMENT AFFECTS OTHERS

If any adjustment is made to the shift stop screws, it is necessary to check the adjustment of the T-bar bracket and drive link adjusting screw as outlined in the C and D Adjustment Parts Manual. This is to ensure you have the proper clearance between the side plate window and the T-bar roller.

5 SHIFT TOGGLE PLATE – CHECK FOR ALIGNMENT TROUBLE

When alignment trouble exists in a machine and the basket seems to be shifting to the left or right, the trouble may be occasionally caused by a loose shift toggle plate. The symptoms of a loose pin are lower case characters crowding next to the upper case characters. The shift toggle plate should be replaced if the link pin is loose.

6 SHIFT TOGGLE PLATE ASSEMBLIES – FIELD REPLACEMENT

The entire shift toggle shaft assembly should be replaced if it is necessary to replace the right-hand or left-hand shift toggle plate assembly. The individual plate assemblies are drilled as a set for accuracy and are not interchangeable.

SPACEBAR

7 CLIP INTERFERENCE WITH KEYBUTTONS

If the spacebar shaft retainer clip is turned on the spacebar shaft assembly so that the open portion of the clip is up, the clip can sometimes interfere with the keybuttons, locking both the keylever and spacebar. The open portion of the clip should be down.

8 SPACEBAR – PREVENT LOCKOUT

The spacebar lockout lug on the linelock bar (09-4) may be formed to prevent locking out the spacebar when the machine is turned off. This will prevent the spacebar from snapping out of the retainers on late-level Model D typewriters or from bending the trip lug on early-level machines when the spacebar is depressed while the machine is OFF.

9 SPACEBAR TYPAMATIC ACTION CRIPPLING 3-UNIT

Occasionally someone requests that the repeat action of the 3-unit spacebar be crippled. An easy way to do this is to use one of the basket shipping grommets. Cut off the "handle" end of the grommet and slip the slotted portion over the front frame in the notch below the keylever. The grommet will not come off and provides a good stop.

10 SPACEBAR TOUCH PROBLEMS MODEL C

In spacebar repeat touch problems, use spring (P/N 1102139) for a heavy touch of 31 ounces and spring (P/N 1117933) for a light touch of 18 ounces. Normal Model C repeat spacebar tension is 24 ounces.

TAB

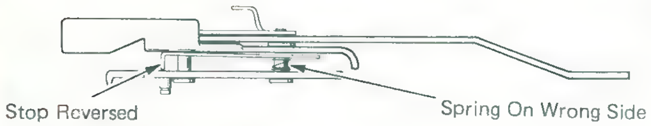
1 TAB LEVER – ASSEMBLED WRONG

(CEM 158) (8/76)

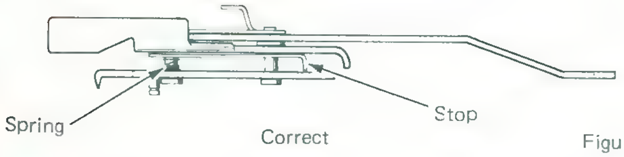
Some replacement tab levers (P/N 1272348) (18-60) have reached the field improperly assembled. The compression spring is mounted on the wrong stud, and the tab check lever stop faces the wrong end.

The tab stop check lever binds and will not work if installed in a machine.

Inspect all tab levers before installation. The figure below will aid in identifying the defective parts (Figure 1).



Incorrect



Correct

Figure 1

2 DECIMAL TAB – REAR CABLE CLAMP – REDESIGNED

(CEM 118) (6/73)

The rear cable clamp has been redesigned to provide a better hold on the center cables. If cables slip at the rear clamp, replace the clamp (30-104). Also, install a nylon strap (30-163) between the cables and Ref. 103.

3 DECIMAL TAB – TAB KEYLEVER – REDESIGNED

(CEM 117) (6/73)

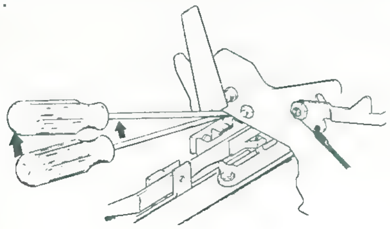
On early level decimal tab machines with the center underscore, it was possible for the decimal tab keybuttons to catch on the row one keybuttons causing a character to print. If this occurs, replace the decimal tab keylevers.

TAB LEVER REPLACEMENT

Outlined below is a good method for tab lever removal:

1. Remove the platen, deflector, left carriage end cover and margin reset lever.
2. Disconnect the tension tape and screw it to the right rail end.
3. Remove the tab lever mounting stud.
4. Push the carriage to the right until the left carriage end plate contacts the final stop on the tab lever.
5. Place the large screwdriver between the tab lever and the end plate and force the tab lever down. This will allow you to push the carriage past the final stop.
6. Disconnect the tab latch spring and tab decelerator link. The tab lever can be lifted straight up and out.
7. By reversing this procedure, the tab lever can be replaced.

The tab lever stop must be intact on the rear rail to ensure reliable tab lever operation.



5 TAB AT RIGHT MARGIN – FAILURE TO UNLATCH – MODELS A AND B

On Models A and B ETs, the former pin-type final tab knockout may fail to unlatch the tab lever at the right-hand margin. This can be corrected by installing a Model C tab rack final stop directly over the old final knockout pin.

6 CARRIAGE U-BAR SPRING – CHECK FOR DECIMAL TAB FAILURES

If a Model C decimal tab fails to tab properly, the carriage universal bar restoring spring may be off. Operators sometimes knock this spring off while brushing out their machines. With the spring off, the U-bar drags across the pawl release lever enough to cause tab failure.

7 CAM OPERATING BAIL FAILS TO RESTORE

The cam operating bail is lightly spring loaded through the cam lever and somtimes may not restore. This condition can be corrected by adding a spring from the extreme left tab on the operating bail to the hole in the bracket around the ribbon mechanism.

8 DECIMAL TAB SKIPPING SET TAB STOPS

This particular type of skipping results from the operator setting tab stops close together near the left-hand margin. The timing is such that the margin control lever may move past the bottom part of the LH margin stop unless the rack is positioned properly.

Tilting the margin rack clockwise (looking from the left side of the machine) while adjusting the tab latch toward the front of the machine permits aligning the tab lever extension so the margin control lever cannot get behind the margin stop.

9 ERRATIC TABULATION – MODEL C DECIMAL TAB

Some cases of erratic tabulation may be traced to interference between the interposer cage and the inner plug and cord assembly, or motor leads. This possibility is reduced by positioning the capacitor as far to the right as possible.

10 INTERPOSER CAGE REPLACEMENT

When replacing an interposer cage in a decimal tab typewriter, be sure to install the interposer assembly mounting screw spacer and the frame mounting bracket. Failure to include these parts will result in tab failure.

11 INTERPOSER RELEASE LEVER SPRINGS

Remove the interposer release lever guide and springs can easily be attached.

12 INTERPOSER REMAINS UP

Occasionally an interposer may remain up after contacting a set tab stop. This happens only when the operator holds the keybutton down while the tab is being unlatched. To correct this condition, form the lug on the bail arm for .000″ clearance instead of .005″-.010″ (0.13-0.25 mm). This allows the restoring bail to contact a greater portion of the interposer link lug.

1 REPEAT KEYLEVERS SOMETIMES NEED MODIFICATION – MODEL C DECIMAL TAB

The two-piece keylever will work only in the fourth row on Model C decimal tabs. If repeat keylevers are desired in any other row, the lug must be modified on the one-piece keylever to provide repeat action.

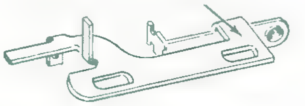
NOTE: This provides a straight repeat action only – NOT repeat/non-repeat. This applies to all positions except 39 and 41, which may be spring loaded to the tab set bracket.

2 TAB CHECK LEVER KEEPER REPLACEMENT – MODELS C AND D DECIMAL TAB

(CEM 10)

Replaces all previous keepers. New-style solid keeper assembly, includes new-style bell mounting screw and bell

NOTE: When installing new keeper on early Model C that has the bell mounting on the rear rail, break off the portion shown in the illustration.



3 TAB LEVER SHIM – DON'T USE ON DECIMAL TAB

The tab lever shim is not required on the decimal tab machine. It will interfere with the tabulation.

4 TAB SET FINGER HITTING CARRIAGE END COVER

When the carriage returns beyond the left margin on Model C decimal tab ETs, the rear of the LH carriage end cover may strike the tab set finger, knocking it out of adjustment. To prevent this condition, position the LH carriage end cover far enough to the left to allow clearance between the cover and set finger when the carriage is all the way to the right. The LH platen knob and detent release lever may also need to be moved to the left to provide sufficient clearance.

5 TRIP LEVER SPRINGS – REPLACEMENT ON DECIMAL TAB MACHINES

Accessibility to trip lever springs in a decimal tab machine is simplified by removing the "C" clip and the cam operating bail fulcrum wire. This will allow you to move the cam operating bail, exposing the trip lever springs.

6 KEYLEVERS – BINDING – MODEL D DECIMAL TAB

(CEM 141) (1/75)

Some decimal tabs have reached the field with binding keylevers which cause touch and keylever restoring problems

With the machine tilted up, form the keylever (30-230) to eliminate interference with keyboard keylever (Mech. 219). Also slightly spread fork on bellcrank (30-233) with screwdriver to eliminate any binds between keylever and bellcrank. Replace keylever (30-230) if forming does not correct.

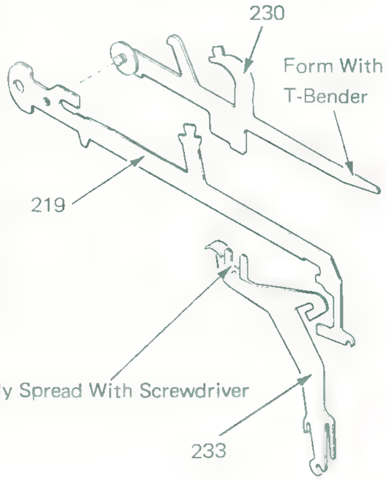


Figure 1

TYPEBAR OPERATING AND DUAL KNOCKOFF

7 CAM LEVER ASSEMBLY RIDING OVER POWER ROLL

To prevent cam lever assemblies on the Model D from riding over the power roll, additional secondary knockoff screws can be installed.

8 CAM LEVER INSTALLATION

Letter cam levers have reshaped spring anchor lugs for mounting the cam lever spring. When installing new cam lever assemblies in earlier level machines, it is necessary to carefully form these spring lugs to a 45-degree position to avoid possible interference with former-level letter cams in adjacent positions.

9 CAM BEARING SUPPORT WEAR – MODEL D

(CEM 120)

Some Model Ds used in heavy applications are experiencing cam bearing support wear in the area of the letter cam fulcrum rod.

This wear can cause intermittent typebar operating problems such as varying impression and letter cams tripping off without the keylever being struck.

This wear is caused by the fulcrum rod rotating in the bearing support. To prevent the rod from rotating, slide it out approximately six inches and put a slight bow in it.

NOTE: The power roll will hold the cams in place.

If excessive wear is found in any bearing support, it should be replaced.

10 DEAD TYPEBARS – FAILURE TO RESTORE

Dead typebars occasionally fail to restore due to the absence of any pressure from the universal bar. Production machines now use a heavier cam lever spring (P/N 1098593) in these positions to ensure the typebar restoring. This may be done in the field if failure to restore occurs.

11 KEYLEVER ALIGNING FIXTURE

A useful tool for holding keylevers in alignment during bearing support removal can be made from a spare bearing support as follows:

1. Cut the ends from the bearing support assembly.
2. File the cut surfaces to remove burrs and sharp edges.

By inserting this "guide comb" between the keylevers at a point immediately in front of the bearing support, the keylevers will be held in their correct positions during removal and replacement of the bearing support.

This tool will prove particularly valuable in converting from carbon ribbon to fabric since the fabric ribbon feed mechanism is shipped assembled to a bearing support.

12 KEYLEVER BEARING SUPPORT MOVEMENT

Upon loosening the keylever bearing support screw prior to keylever fulcrum wire movement, the keylever bearing support may also move.

In order to maintain the proper adjustment of the keylever bearing support, a locating mark may be scribed on both the side frame and the keylever bearing support before loosening this assembly. A "+" mark for this purpose would reference movement in any direction.

13 KEYLEVER REPLACEMENT

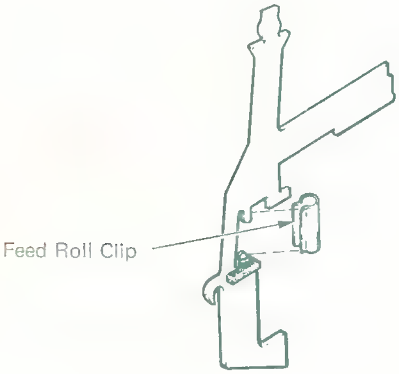
When replacing keylevers, you will find that by raising the typebar of that keylever and the adjoining bar on either side, more room is provided for removal.

LETTER CAM REPEATING

A letter cam which repeats occasionally can be stopped from repeating by shortening cam spring (from cam shoe to cam lever) about 1/4" (6.35 mm). This can be accomplished very quickly and produces no ill effects. A good test, after making this adjustment, is to move impression indicator to 10 with machine in upper case.

REPEAT KEYLEVERS – BLOCKING OUT – SERVICE TIP

Use a feed roll clip to block out unwanted repeat keylevers on Model D Typewriters.



REPEAT KEYLEVERS – QUICK FIX

When two-piece repeat, non-repeat keylevers go into repeat position too easily, remove the keylever compression spring and replace it with a clutch operating arm spring. This heavier spring supplies a definite "repeat position" which is more nearly equal to that on the plunger-type repeat keylevers and the Model C repeat keylevers.

REPEAT PLUNGER AND SPRING REPLACEMENT

When replacing or installing a repeat plunger and spring, form end loop of spring to hold plunger shaft tight. This will enable you to hold onto spring and guide plunger into place.

SEGMENT SHIM INSTALLATION

If difficulty is experienced in installing this shim, it is possible to cut the shim so that the right-hand hole will slide over the top of the segment locating pin. This is soft material which can easily be cut with the diagonal cutters.

TYPEBAR FULCRUM WIRE INSTALLATION

A platen variable button can be used to push the typebar fulcrum wire back into the segment. This method is very effective and is safer than many methods now being used.

TYPEBARS HANGING UP

A worn type rest pad can sometimes cause typebars to hang to one another. When this problem is encountered, the pad can be removed, turned around and reinstalled to temporarily fix the problem.

HEAVY UPPER CASE – MODEL C

Use the following approach to help minimize heavy upper case:

1. Raise the type rest pad.
2. Set cam clearance at .010"-.012" (0.25-0.30 mm).
3. Set shift-off from a minimum of .006" (0.15 mm) to a maximum of .015" (0.38 mm).

These three items will usually give the desired results. However, if a closer balance between upper and lower case is required for a particular application, the following procedure is recommended:

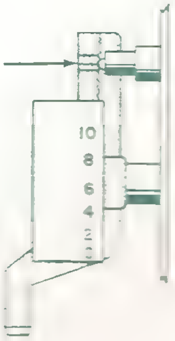
1. Place shim (P/N 1117923) between the basket and the segment over the locating pin and adjusting screw, with the thin side up and parallel with the top of the segment.
2. Readjust cam clearance to a minimum of .012" (0.30 mm) in the center of the machine. The cam clearance at both ends of the set of cams must be even but will be slightly greater than the .012" (0.30 mm) adjusted for in the center. The bowed effect results from the shimming and is necessary to obtain even color balance SIDE TO CENTER. (On some machines, the varying cam clearance can cause a difference in keyboard touch. After making this change, be sure to check that touch is acceptable.)
3. Adjust the platen eccentric to obtain .001"-.003" (0.03-0.08 mm) ring in lower case on both sides of the platen.
4. Readjust the height of the segment by means of the eccentrics to obtain even top and bottom clearance.
5. Now readjust impression; impression will have changed greatly. The center, especially, should have become lighter.
6. If the shift-off gauge is available, recheck the amount of shift-off. Shift-off should be between .008"-.012" (0.20-0.30 mm) for the best results. You may have to take segment guide spring shims out to obtain proper shift-off. A rule to go by is one .010" (0.25 mm) shim for every .005" (0.13 mm) shift-off.

You can achieve a relatively well-balanced condition in the center of the impression range. If the machine is adjusted to just print at "0" impression setting, it should have a balance between upper and lower case at an impression setting between 3 and 7. Below a 3 impression setting, you may notice a slightly heavy UPPER CASE and above a 7 or 8 impression setting, you may have a slightly heavy lower case. This is natural, and the reason for this is that upper case characters do not have as much range, or difference between 0 and 10, as the lower case characters have.

On many typestyles, it is desirable to have the upper case hitting slightly heavier than the lower case because the printing area is larger and needs a heavier blow to give an even impression. However, on some fine-line typestyles, this condition becomes objectionable and the above refinements are necessary.

IMPRESSION INDICATOR SETTING WITH KEYPLATE REMOVED

When the keyplate has been removed and you want to set the impression indicator at 5, line up the notch in the impression indicator with the impression indicator detent plunger (see illustration).



1 IMPRESSION – LIGHT LETTER "H" – MODEL C "EXECUTIVE" TYPEWRITER

An occasional light "H" on "Executive" Typewriters may be traced to the selector bar contacting the clip spring on the impression control shaft.

2 IMPRESSION TIPS – "EXECUTIVE" TYPEWRITERS USED ON AUTOTYPISTS

If the typebars fail to print evenly on "Executive" Typewriters used on autotypists, the cause of this problem may be a bind which is caused by the interference of the interposer connecting links and the autotype connecting links to the keylevers. Interference may be set up by too much side movement where the interposer links connect to the selector bails. This causes the interposer links to come in contact with the autotype links on either side of the interposer links and restrict the motion of the selector bails, selector bars, etc. This results in a light impression or no impression at all. This problem can be corrected by installing a feed roll retainer clip (P/N 1110093) on both sides of the interposer link to restrict side movement.

3 IMPRESSION VARIES FROM ONE SIDE TO THE OTHER

When all impression adjustments are correct and the impression seems to vary from one side of the keyboard to the other, do not leave out the possibility that the knockoff bar adjusting screw has worked loose. If it is loose, adjust it up or down so the bar is parallel with the impression control shaft and then proceed to refine the knockoff screw adjustments.

4 IMPRESSION – VELLUM APPLICATIONS (CEM 133)

When impression problems are encountered on typewriters used for typing on vellum or other slick surfaces, try the following:

1. Set all type heavy on cylinder.
2. Adjust for light impression. (Turn impression control down and adjust for even impression.)
3. Use 5122 ribbons.
4. Place a sheet of abrasive paper such as number 600 carborundum in the machine. Type each character at least four times. This will roughen the face of the type slug, resulting in better impression.

   CAUTION: This may cause the typeface to broaden. Check to make sure other applications are not adversely affected.

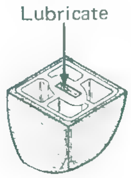
5 KEYBOARD NOISE SUPPRESSION BLANKET

Chemical cleaning of Model D typewriters may have an adverse effect on the suppression blanket. The blanket should be removed before cleaning to avoid keyboard touch problems.

6 KEYBUTTON INSTALLATION

When installing keybuttons, you may find them easier to install if you place a small amount of lubricant on the opening of the keybutton.

This should not be done in cases where loose keybuttons are a problem, i.e., automatic letter writing machines, etc.



7 KEYLEVER SPRING RETAINER FOAM STRIP MUST BE REMOVED

In order to ensure that keylever springs do not come off during shipment, a foam strip has been stuck on top of the keylever guide comb.

NOTE: This foam strip is for assembly and shipping purposes only. It should be removed at the first opportunity to ensure spacebar touch is not affected.

8 TYPEBAR LINKS DISCONNECTING DURING TYPE DROP

To prevent the typebars from being disconnected from their links during type drop, the type rest spring can be pushed down from the pad and removed to the rear under the typebars for additional support.

9 TYPEBAR AND LETTER CAM ASSEMBLY WEAR

When a typebar or letter cam assembly is worn so that the typebar link will not stay in, a changeable typebar link may be used temporarily until the worn part can be replaced.

10 TYPEBAR SERVICE – MINIMIZE (STENCILS)

Pack grease in the segments of machines equipped with stencil writing attachments to minimize typebar mechanism service calls. Segment must first be clean and dry. Periodic flushing with cleaning fluid may be required.

11 TYPEBAR, TYPEGUIDE AND SEGMENT IDENTIFICATION

HARDENED TYPEBARS
These typebars are hardened at the typebar link and fulcrum wire hole after manufacturing to reduce wear. The hardened typebar is a pre-tempered typebar available in ground or unground.

MODIFIED GEOMETRY TYPEBARS
These typebars are used in positions 32, 36, 38 and 39 in the Model D Standard and "Executive" Typewriters. These typebars are made different between the typebar link and fulcrum wire hole to balance the impression for punctuations. The modified geometry typebar is available in unground only.

CHANGEABLE TYPEBARS
The typebars are special made in the fulcrum wire hole to allow an operator to change the typebars for different characters. The changeable typebar is available in ground and unground in positions 0, 3, 7, 11, 15, 19, 23, 27, 31, 32, 35, 36, 38, 39, 40, 41, 42 and 43.

HEAVY-HEAD TYPEBARS
Typebars with the anti-clash lugs. These typebars are available in ground and unground.

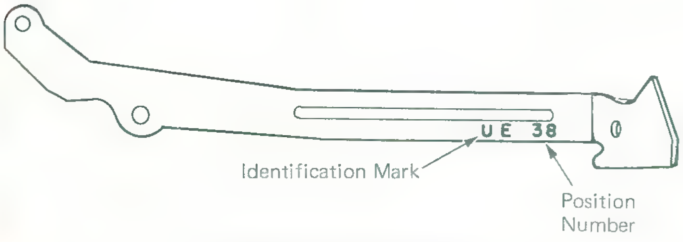
LIGHT-HEAD TYPEBARS
Typebars with the anti-clash lugs ground off to prevent cutting usually used on punctuations. These typebars are available in ground and unground.

DEAD TYPEBARS
These typebars are cut at the point of contact of the U-bar so not to achieve escapement of the machine. The dead typebar is not available in changeable typebars but is available in both ground, unground and hardened.

(Continued On Next Page)

TYPEBAR IDENTIFICATION MARKS

ME	Executive Modified Geometry Typebar
UE	Unground "Executive" Typewriter
U	Unground Standard
MU	Modified Geometry Unground Standard
R	Ground Hardened
E	Ground "Executive" Typewriter
D	Unground Braille
OU	Unground Changeable

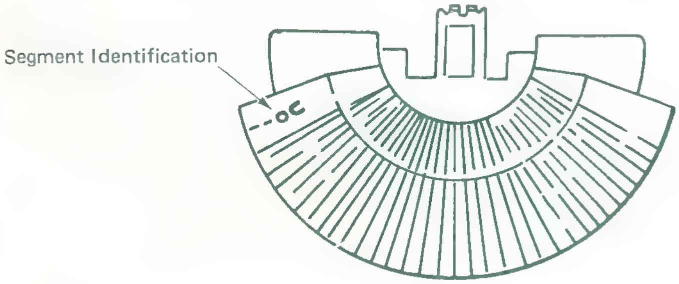


TYPEGUIDE PART NUMBERS

1103855	Typeguide used for ground typebars
1117000	Typeguide used for production (unground) machines
1116961	Typeguide used for extra-large type slugs and long. The typeguide throat has been ground down to allow good typebar entry.
1154340	Typeguide used on E13B typewriters. This typeguide has .011" (0.28 mm) closer throat clearance to provide better type alignment. The typebars are usually harder to align with this typeguide, but will hold the alignment longer.

SEGMENTS

Description	Identification
86 Character Standard Ground	003
88 Character Standard Ground	004
88 Character "Executive" Typewriter Ground	026
86 Character "Executive" Typewriter Ground	027
88 Character 300 Motion "Executive" Typewriter Ground	032
86 Character 300 Motion "Executive" Typewriter Ground	033
Character Recognition, E13B And Austempered Typebars	753
88 Character "Executive" Typewriter Unground	U011
86 Character "Executive" Typewriter Unground	U012
88 Character 300 Motion "Executive" Typewriter Unground	U014
86 Character Standard Unground	U268
88 Character Standard Unground	U269



NOTE: On some segments identification is on the right side.

1 TYPE GUIDE, FOR BELOW-WRITING-LINE CHARACTERS

When typebars with characters that extend considerably below the writing lines are installed, it is recommended that typeguide (P/N 1116961) also be installed. This typeguide was designed to provide clearance with the descenders.

2 TYPE REST PAD – IMPRESSION TROUBLE

Impression and touch problems may be caused by the type rest pad not floating and restoring freely on its spring support. Impression varies because the cam clearance varies with the rest position of the typebar. Check for rubber dust in the area under the type rest resulting from burrs on the inside of the type rest frame assembly. It may be necessary to disassemble the type rest frame and polish the metal surfaces. Surfaces are polished in current manufacture. Make sure the type rest is free floating on its spring support after reassembly.

3 U-BAR – EASY ADJUSTMENT – MODEL C

The following method may be used to adjust the Model C U-bar for equal tripping point:

1. Remove rear top cover.
2. Position typebars in typeguides as per Reference Manual.
3. Using the small socket wrench, approach the U-bar adjusting screw from the rear of the machine. Place the wrench between the upper right corner of the motor and the bottom of the backspace mechanism to reach the U-bar adjusting screw.
4. Make adjustment and replace cover.

4 COMPLETE SETS OF GROUND TYPE – OBSOLETE (CEM 162) (5/77)

Complete sets of ground typebars for Models A, B and early C are no longer available for field replacement.

When replacing a complete set of type on machines with ground type, it will be necessary to order an unground set of type with segment.

Individual ground typebar replacements will still be available.

P/Ns 1271102 and 1077094 (sets of ground type for Models A, B and C) are replaced by P/N 1268332 (includes segment).

Procedure for ordering remains the same. Refer to Type Catalog (F/N S241-5687).

UTILITY INSCRIBER

LINING UP PRINTED FORMS – MODEL C – E13B

Here is a suggested procedure to make it easier and faster for the operator to insert preprinted forms. Insert the form and type in exact center of the squares. (Shift the form left or right to center the character in the square.) After typing, adjust the front dust cover so that repositioning indicator wire lines up with the line printed on the form for correction purposes. Install an 8-pitch LH cardholder and adjust the cardholder lines to the lines on the forms. After these adjustments, the operator can insert a form, roll it up and see immediately if form is positioned correctly by checking if lines are lined up.

NOTE: With this modification, the operator will have no way of exactly locating his/her standard characters. He/she will have to adjust to their being off approximately 1/2 unit.

CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12],Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

IBM *Office Products Division Customer Engineering ● "IBM", "Executive", IBM "EXECUTARY" and "Selectric" are registered trademarks of the International Business Machines Corp.*

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SERVICE INFORMATION 11-1-78

Model(s): A, B, C

SUBJECT: Part Numbers For Painted Cover Parts

New part numbers for painted cover parts for Models A, B, and C Electric Typewriters are effective immediately.

1. Provide individual part numbers for each color of the most commonly used painted cover parts for Models A, B and C. Eliminate the need to specify color when ordering these parts. (Some low usage cover parts will require color to be specified.)
2. Only orders using the new part number can be accepted by the Parts Distribution system. Orders previously entered but not yet filled must be resubmitted using the new part number. Existing orders using the old part number will be cancelled.
3. Use charts (Fig. 1 and 2) to order painted cover parts.
4. Colors other than those listed will be available on an SER only.
5. Should you require ordering assistance for a painted cover part not listed in these charts, contact Lexington CE Product Services.
6. Regular orders require 15 to 20 working days. Emergency orders should be submitted only for "machine down" situations.

PAINTED COVER PARTS

		MECH	REF.	Opal Gray P/N	Sapphire Blue P/N	Topaz Bronze P/N	Emerald Green P/N	Garnet Rose P/N	Onyx Blue P/N	Sdstone Beige P/N	Raven Black P/N	Specify Color P/N
TOP COVER	13"-24"	04	22	1303548	1303549	1303550	1303551	1303552	1303553	1303554	1303555	
	30"	04	22									1303556
	Check Writer	41	09									1303575
	Vis Index	52	56									1303575
	Leading Edge	47	18									1303576
COVER CONVERSION B/M												
	13" Std.	04	87	1270891	1270894	1270892	1270893	1270895	1270896	1271931	1272691	
	17" Std	04	87	1271104	1271107	1271105	1271106	1271108	1271109	1271932	1272692	
	13" Exec	04	87	1271110	1271111	1271112	1271113	1271114	1271115	1271933	1272693	
	17" Exec.	04	87	1271116	1271117	1271118	1271119	1271120	1271121	1271934	1272694	
END COVER	LH Std /Exec	04	08	1303600	1303601	1303602	1303603	1303604	1303605	1303606	1303607	
	RH Std /Exec	04	08	1303608	1303609	1303610	1303611	1303612	1303613	1303614	1303615	
	LH Check Writer	41	14	1303616	1303617	1303618	1303619	1303620	1303621	1303622	1303623	
	RH Check Writer	41	14	1303624	1303625	1303626	1303627	1303628	1303629	1303630	1303631	
	LH Pinfeed	48	23	1303633	1303634	1303635	1303636	1303637	1303638	1303639	1303640	
	RH Pinfeed	48	23	1303641	1303642	1303643	1303644	1303645	1303646	1303647	1303648	
	LH Waybill	42	24									1303632
	LH Vis Index	52	79									1303649
	RH Vis. Index	52	40									1303650
	LH Card Positioning	43	02									1303632
REAR COVER	13"-24"	04	20	1303557	1303558	1303559	1303560	1303561	1303652	1303653	1303564	
	30"	04	20									1303565
REAR PAPER TABLE	13"	02	04	1303651	1303652	1303653	1303654	1303655	1303656	1303657	1303658	
	17"	02	04	1303659	1303660	1303661	1303662	1303663	1303664	1303665	1303666	
	20"	02	04	1303667	1303668	1303669	1303670	1303671	1303672	1303673	1303674	
	24"	02	04	1303675	1303676	1303677	1303678	1303679	1303680	1303681	1303682	
	30"	02	04	1303683	1303684	1303685	1303686	1303687	1303688	1303689	1303690	
	13" Check Writer	41	45									1263577
	17" Check Writer	41	45									1263578
	20" Check Writer	41	45									1263579
	12" Lift Platen	33	101								1093899	
	16" Lift Platen	33	101								1095062	
	12" Lift Platen Pin Feed	50	66								1107656	
	16" Lift Platen Pin Feed	50	66								1107655	
BOTTOM CASE	Std And Exec	04	21	1303566	1303567	1303568	1303569	1303570	1303571	1303572	1303573	
	Lift Platen	46	82									1303574
				Brown	Dark Gray	Dark Green	Dark Blue				Raven Black	Specify Color
KEYPLATE	84 Character	04	18									1303577
	86 Character	04	18	1303578	1303579	1303580	1303581				1303582	
	88 Character	04	18	1303583	1303584	1303585	1303586				1303587	
	86 Character Decimal Tab	30	224	1303588	1303589	1303590	1303591				1303592	
	88 Character Decimal Tab	30	224	1303593	1303594	1303595	1303596				1303597	
	86 Character Palm Tab	48	001									1303598
	88 Character Palm Tab	48	001									1303599

Figure 1

(Continued)

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END COVERS DOVE GRAY				
TYPE	MODEL	MECH	REF.	P/N
A	LH Std.	04	01	1073676
A	LH Exec.	04	01	1073678
A	RH Std.	04	07	1073675
A	RH Exec.	04	07	1073677
A	LH Check Writer	41	129	1078543
A	RH Check Writer	41	120	1078549
B	LH Std. And Exec.	04	01	1303706
B	RH Std. And Exec.	04	07	1303707
B	LH Decimal Tab	30	182	1303708
B	RH Decimal Tab	30	184	1303709
B	LH Check Writer	41	01	1303710
B	RH Check Writer	41	10	1303711
B	LH Clamp Type	42	36	1303712
B	LH Dual Purpose	43	16	1303712
B	RH Formsline Selector	45	01	1303713
B	LH Vis. Index	52	37	1303714
B	RH Vis. Index	52	25	1303715
B	Formsline Frame	45	04	1265745
B	Formsline Cover	45	15	1265741
B	Formsline Stop Cover	45	20	1106046

KEYPLATES CHARCOAL				
TYPE	MODEL	MECH	REF.	P/N
A&B	88 Char. 0 Pos. 4th Row	04	29	1303716
A&B	84 Char. Exec.	04	29	1303717
A&B	88 Char. Exec.	04	29	1303718
A&B	84 Char. Std.	04	29	1303719
A&B	88 Char. Std.	04	29	1303720
A&B	84 Char. Dec. Tab	30	137	1303721
A&B	88 Char. Dec. Tab	30	137	1303722
A&B	88 Char. Part Carr. Ret.	34	113	1303724
A&B	88 Char. Palm Part CR	34	113	1303725
A&B	86 Char. 0 Pos. Toll Bill	35	10	1303726
A&B	86 Char. 43 Pos. Toll Bill	35	10	1303727
A&B	84 Char. LH Palm Tab	48	02	1303728
A&B	88 Char. LH Palm Tab	48	02	1303729
A&B	84 Char. RH Palm Tab	48	18	1303723

REAR PAPER TABLE					
TYPE	MODEL	MECH	REF.	CHARCOAL	BLACK
B	12"	02	21	1108890	X
B	16"	02	21	1108898	X
B	20"	02	21	1108899	X
B	24"	02	21	1108963	X
B	30"	02	21	1108964	X
B	12" Check Writer	41	03	1108890	X
B	16" Check Writer	41	03	1108898	X
B	20" Check Writer	41	03	1108899	X
B	12" Lift Platen	30	42	X	1093899
B	16" Lift Platen	30	42	X	1095062
B	12" Lift Platen – Pin Feed	50	05	X	1107656
B	16" Lift Platen – Pin Feed	50	05	X	1107655
A	12"	02	187	X	1077477
A	16"	02	187	X	1077478
A	20"	02	187	X	1077479
A	24"	02	187	X	1078447
A	Toll Biller	35	75	X	1093615

MAIN COVERS					
TYPE	MODEL	MECH	REF.	DOVE GRAY	CHARCOAL
A&B	Top Cover Only	04	13	1303692	X
A&B	Front And Top Covers Exec. Carbon Ribbon	04	28	1261010	X
A&B	Front And Top Covers Std. Fabric Ribbon	04	28	1261604	X
A&B	Front And Top Covers 30" Fabric Ribbon	04	28	1261603	X
A&B	Rear Case Std. & Exec.	04	19	1303693	X
A&B	Rear Case 30"	04	19	1303694	X
A&B	Adapter Bracket Std. And Exec.	04	64	X	1303695
A&B	Adapter Bracket 30"	04	64	X	1303696
A&B	Carb. Rib. Magazine LH	04	04	1303697	X
A&B	Carb. Rib. Magazine RH	04	12	1303698	X
A&B	Rail Brace 30" LH	02	16	1303701	X
A&B	Rail Brace 30" RH	02	03	1303702	X
A&B	Rail Brace 20"-24"	02	19	1303703	X
A&B	Rail Support 30" RH	02	11	1303704	X
A&B	Rail Support 30" LH	02	15	1303705	X
B	Adapter Bracket B I/O	32	94	X	1303699
B	Mag Unit Cover B I/O	32	106	X	1303700

Figure 2

164 SERVICE INFORMATION

11-1-78

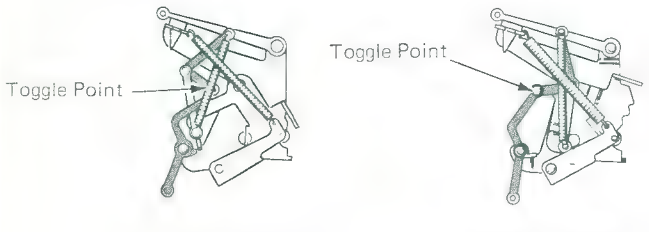
Model(s): C, D

SUBJECT: Ribbon Lift Mechanism — Toggle Arms Out Of Position

PURPOSE: Some ribbon lift mechanisms (14-48) have the toggle arms incorrectly assembled (Fig. 1). The mechanism will not function properly in this condition. The mechanism is **NOT** defective.

SOLUTION: Restore arms to the correct position. Holding the mechanism with the shaft pointing away from you:

1. Unhook spring (14-82), allowing the detent arm to fall free (Fig. 2).
2. Rotate shaft and detent plate assembly fully counterclockwise to maximum position (Fig. 2).
3. Apply slight pressure at toggle point (Fig. 2) in direction indicated by arrow. This will cause the linkage to move over center to the proper position.
4. Restore shaft and detent plate assembly to correct position (Fig. 1), and reconnect detent arm spring.



Incorrect Position **Correct Position**

Figure 1

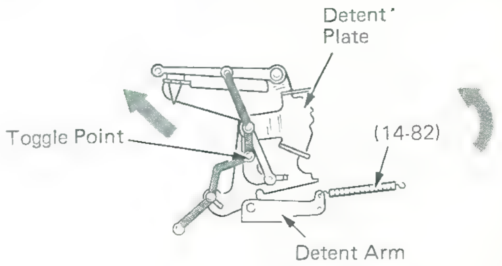


Figure 2

Note: This condition should appear only on field replacement parts. No reports have been received of new machines with this problem.

165 RELIABILITY

11-1-78

Model(s): D1, D4

SUBJECT: Tab Lever Adjusting Plate Breakage

Breakage of the tab lever adjusting plate may occur as a result of cracks in the material of the plate.

PARTS REQUIRED:

MECH/REF		PART NO.	DESCRIPTION	QTY.	PRICE
18	103	1171557	Adjusting Plate	1	.10

PARTS INFORMATION: Stocks of P/N 1171557 should be scrapped and reordered as needed.

Use Service Code 32

This CEM Expires 10-1-79

CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12],Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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166 SERVICE INFORMATION

7-18-79

Model(s): Typebar

(Revised) 3-26-80

SUBJECT: Power Rolls — Defective

Some October and November power rolls have been found defective. Power rolls bearing the date codes 108 or 118 (Figure 1) should be returned using the appropriate parts requisition form.

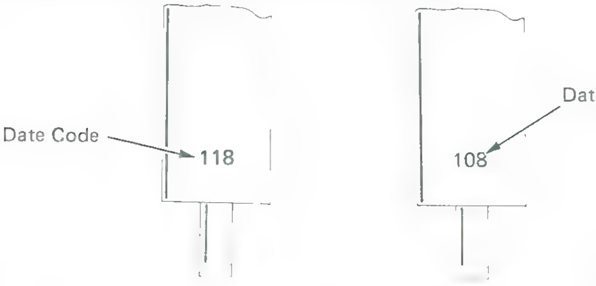


Figure 1

Note: Cutoff date for the return of October and November date coded power rolls is April 1, 1980. All power rolls not returned by this date shoud be scrapped.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Applicable Service Code

167 RELIABILITY

'0-10-79

Model(s): D

SUBJECT: Ribbon Feed Spring — Breaking

PURPOSE: Some defective ribbon feed arm hubs (14-160) have been released with the hole drilled off center causing the ribbon feed spring (14-175) to break.

SYMPTOM: Ribbon feed spring breaks within days of replacement, and cause cannot be identified.

SOLUTION: Replace the feed arm hub and the spring.

MACHINES AFFECTED: Between S/N: 7051988—7067920 and 8620040— 8624799.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Service Code 32

This CEM Expires 3-31-80

168 SERVICE INFORMATION

10-10-79

Model(s): C, D

SUBJECT: APM Error

In Model C&D APM (F/N 241-5231-8), frame 130, the adjustment notes for 1/36 pitch B/S guide pin adjustment are reversed. 1/32 pitch adjustment notes are **correct**. Refer to C&D Service Manual (F/N 241-5665-1) for proper wording.

Make appropriate corrections. (This item will be printed in the C&D CSI until revision of the C&D APM.)

169 SERVICE INFORMATION

3-26-80

Model(s): A, B, C, D

SUBJECT: Typebars — Over Plated

SYMPTOM: Over-plating around the typebar fulcrum hole on field replacement typebars. The fulcrum rod does not fit through the typebar mounting hole with ease.

SOLUTION: Check for over-plating around the hole and remove with a round file or other suitable tool.

170 SERVICE INFORMATION

3-26-80

Model(s): B

SUBJECT: Universal Front Paper Table — Redesigned

PURPOSE: Front paper tables (02-20) for the Model B typewriter have been redesigned. Pitch markings have been eliminated, and only one paper table is now required for each carriage length. Front paper tables are available only in flat black finish.

MECH/REF		PART NO.	DESCRIPTION	QTY.	PRICE
02	20	1116322	Front Paper Table — 12"	1	
		1116323	Front Paper Table — 16"	1	
		1116324	Front Paper Table — 20"	1	
		1116325	Front Paper Table — 24"	1	
		1116326	Front Paper Table — 30"	1	

Parts Information: Former level parts are no longer available.

171 SERVICE INFORMATION

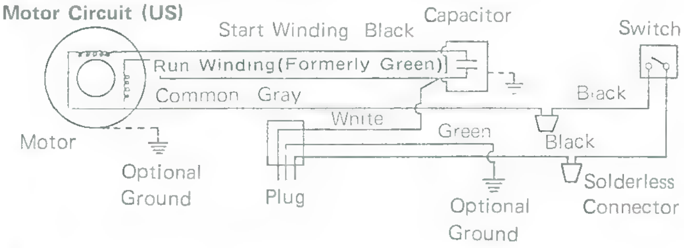
3-26-80

Model(s): C, D

SUBJECT: Service Manual — Incorrect Wiring Diagram

The first diagram of Figure 10, page 10 of Form No. 241-5665-1 is incorrect. The correct diagram can be found in the APM Form No. 241-5231-8, page 44, first picture, top left. Note this change in your Service Manual. The correct diagram is shown in Figure 1.

Motor Circuit (US)



Non-Double Insulated, Capacitor (S.P.S.T. Switch)

Figure 1

TIMELY INFORMATION PROGRAM

3-26-80

Model(s): A, B, C, D

If experiencing repeated print problems on Typebar machines, do not overlook the top cover foam. If the foam is deteriorated, it may fall into the segment and restrict typebar movement. The foam can be removed and replacement is not necessary.

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CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12],Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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166 SERVICE INFORMATION

7-18-79

(Revised) 10-10-79

Model(s): Typebar

SUBJECT: Power Rolls — Defective

Some October and November power rolls have been found defective. Power rolls bearing the date codes 108 or 118 (Figure 1) should be returned using the appropriate parts requisition form.

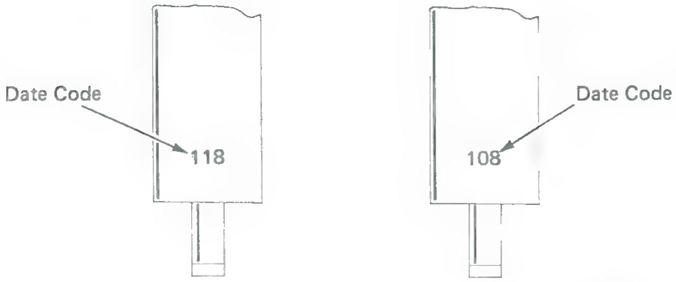

Figure 1

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Applicable Service Code

167 RELIABILITY

10-10-79

Model(s): D

SUBJECT: Ribbon Feed Spring — Breaking

PURPOSE: Some defective ribbon feed arm hubs (14-160) have been released with the hole drilled off center causing the ribbon feed spring (14-175) to break.

SYMPTOM: Ribbon feed spring breaks within days of replacement, and cause cannot be identified.

SOLUTION: Replace the feed arm hub and the spring.

MACHINES AFFECTED: Between S/N: 7051988—7067920 and 8620040— 8624799.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Service Code 32

This CEM Expires 3-31-80

168 SERVICE INFORMATION

10-10-79

Model(s): C, D

SUBJECT: APM Error

In Model C&D APM (F/N 241-5231-8), frame 130, the adjustment notes for 1/36 pitch B/S guide pin adjustment are reversed. 1/32 pitch adjustment notes are correct. Refer to C&D Service Manual (F/N 241-5665-1) for proper wording.

Make appropriate corrections. (This item will be printed in the C&D CSI until revision of the C&D APM.)

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CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12],Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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A current set of typebar CEM material consists of the Safety & Service Information Book (F/N 241-5501-4), CEMs starting on page 27 (reissued 8-25-76), and the CEM contents page dated 8-25-76. Refer to the contents page for the status of all typebar typewriter CEMs.

141 SERVICE INFORMATION

1-15-75

Model(s): Model D Decimal Tab

SUBJECT: Keylevers – Binding

PURPOSE: Some decimal tabs have reached the field with binding keylevers which cause touch and keylever restoring problems.

SOLUTION: With the machine tilted up, form the keylever (30-230) to eliminate interference with keyboard keylever (Mech. 219). Also slightly spread fork on bellcrank (30-233) with screwdriver to eliminate any binds between keylever and bellcrank. Replace Keylever (30-230) if forming does not correct.

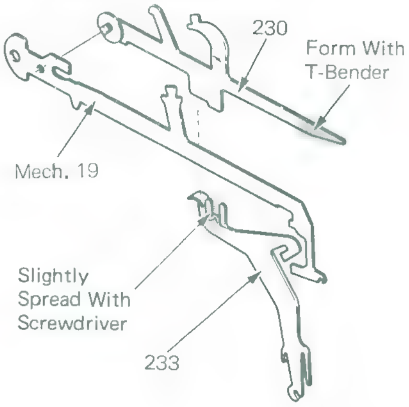


Figure 1

PARTS REQUIRED:

MECH/REF		PART. NO.	DESCRIPTION	PRICE
30	230	1231186	Keylever Decimal Tab 1-Unit	.55
	230	1231185	Keylever Decimal Tab Other Positions	.55

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

Use Applicable Service Code.

CEMs 142-151 can be located by using Typebar contents page.

152 SERVICE INFORMATION

7-16-75
(Revised) 8-27-75

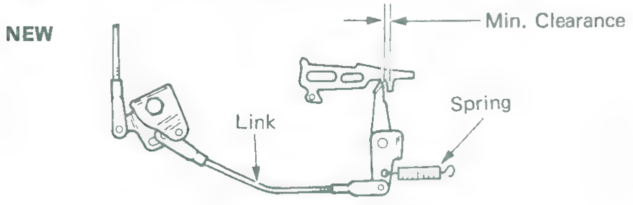
Model(s): Model D Executive

SUBJECT: Backspace – Model D "Executive"

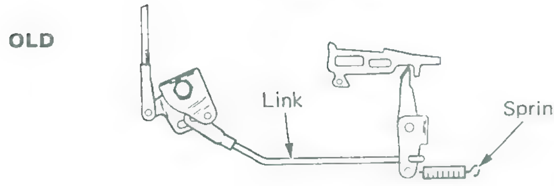
PURPOSE: To facilitate "Executive" backspace adjustments.

SYMPTOM: Difficulty adjusting "Executive" backspace mechanism.

SOLUTION: Install link, P/N 1190637 (Figure 1).



TOP VIEW



TOP VIEW

Figure 1

ADJUSTMENTS: Install the link in the outside hole on the alignment bellcrank and the spring on the inside hole.

PARTS REQUIRED:

MECH/REF		PART NO.	DESCRIPTION	PRICE
01	042	1190637	Link	*

Note: This link replaces the former level alignment link and will be on all new machines.

MACHINES AFFECTED: Model D "Executive" above S/N 8586831.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Applicable Service Code.

CEMs 153-156 can be located by using Typebar contents page.

157 SAFETY

5-5-76
(Revised) 7-28-76

Model C

SUBJECT: General Electric Motor – Capacitor Type – Motor Leads Worn

SAFETY LOCATION: Where leads are held in place by nylon wire tie (Figure 1).

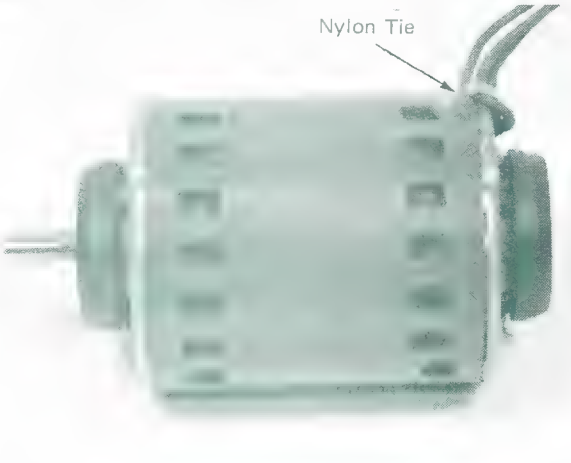
SAFETY PRECAUTION: The possibility of an electrical hazard exists on all General Electric capacitor type motors that have a nylon wire tie around the motor leads where they leave the motor end bell. It is possible that the insulation is worn in the area where the wires contact the end bell under the nylon tie.

SAFETY CORRECTIVE ACTION: On next service call or before 10-31-76, check all motors in affected machine serial number range. If nylon tie is present, motor must be replaced. **This applies to SA and per call machines.**

Note: When replacing motors in affected machines, it will be necessary to convert machine to a centrifugal force motor (Mech. 211-053, P/N 1231180). The following procedure should be followed:

1. Caution: Disconnect power from machine before working in the area of the motor.
2. Remove affected motor (11-053).
3. Remove capacitor and component parts (11-010).
4. Install new motor (11-053) and motor clutch B/M (11-114).
5. On machines with 3-wire linecords, install ground wire (11-052), washer (11-123) and screw (11-028). See picture in typebar Model C & D parts catalog (Mech. 11, motor and drive current level, for proper installation location of ground wire).
6. On some machines it may be necessary to remove the spacer (11-048) from behind the idler pulley (11-032).
7. If the motor adjusting stud (11-027) interferes with the motor clutch pawls, replace with screw, P/N 12132 (11-027).

This conversion is a MUST due to the depleted stock condition of P/N 1010921. This depleted condition will exist through October, 1976.



(Continued)

Figure 1

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(CEM 157 Continued Revised 10-20-76)

PARTS REQUIRED:

MECH/REF		PART NO.	DESCRIPTION	QTY.	PRICE
11	06	1124799*	Wire Connector	3	.15
	27	0012132*	Screw	1	.05
	28	0738378*	Screw, Self-Threading	1	.02
	52	1132799*	Ground Wire	1	.30
	53	1231180	Motor, 115V 60 Hz	1	55.00
	97	1117046	Hub Asm.	1	1.50
	98	1141504	Spacer, Nylon	2	.01
	101	1073418	C-Clip	2	.01
	102	1175107	Screw	1	.05
	103	1117056	Collar	1	.15
	106	1117548	Washer Spring	1	.10
	114	1280523	B/M, 14 Tooth	1	2.25
	114	1269635*	B/M, 15 Tooth	1	2.25
	123	0056079*	Washer	2	.03
		1231897	Motor Conversion B/M		*

NOTE: The B/M contains all the listed parts not marked with an asterisk in addition to cover conversion screw Mech. 04, Ref. 112, 115, 116, & 117.

*Order only if required.

MACHINES AFFECTED: Model C standard between S/N 1163613 to 1240766. Also "Executive" between S/N 2017893 and 2035742, or any Model C that has a replacement GE motor with the nylon tie installed.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

ESTIMATED INSTALLATION TIME: .8 hr.

Use Service Code 32

This CEM Expires 11-30-76

158 SERVICE INFORMATION

8-11-76

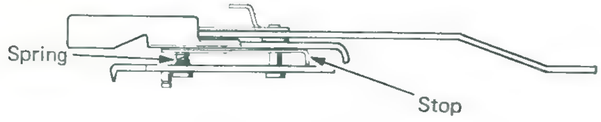
Model(s): Model C

SUBJECT: Tab Lever — Assembled Wrong

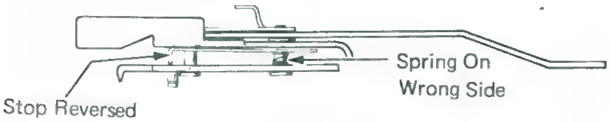
PURPOSE: Some replacement tab levers (P/N 1272348) (218-60) have reached the field improperly assembled. The compression spring is mounted on the wrong stud, and the tab check lever stop faces the wrong end.

SYMPTOM: The tab stop check lever binds and will not work if installed in a machine.

SOLUTION: Inspect all tab levers before installation. The figure below will aid in identifying the defective parts (Fig. 1).



CORRECT



INCORRECT

Figure 1

159 SERVICE INFORMATION

10-20-76

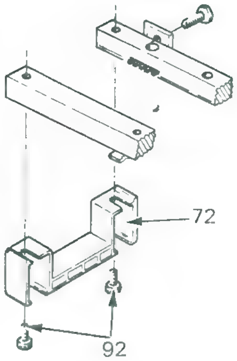
Model(s): C & D

SUBJECT: Rail Guards — Universal — New

A universal rail guard (02-72) is now used on current production 17 inch carriage Model Ds (Figure 1). This new guard is available in black only.

When ordering a replacement guard, it will be necessary to order two.

ADJUSTMENTS: The old style guards fit over the end of the rails (02-73 &79), the new guard is attached under the rails with the screws (02-92) inserted through the bottom of the rails.



PARTS REQUIRED:

MECH/REF		PART NO.	DESCRIPTION	QTY.	PRICE
02	72	1188399	Rail Guard		*
	92	1231265	Screw		*

MACHINES AFFECTED: Standards above S/N 1854800 and "Exec." above 2184600.

Use Applicable Service Code.

160 SERVICE INFORMATION

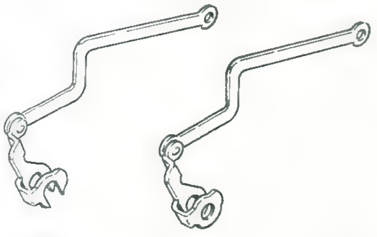
12-15-76

Model(s): C & D

SUBJECT: Platen Detent Release — Link & Cam Asm. — Redesigned

PURPOSE: To allow easier replacement of link & cam asm. (02-64). Replaces P/N 1154089.

SOLUTION: The new link & cam asm. removes the need to disassemble the left end of the carriage (02-200) for new installation. Use the following procedure to remove and replace:



NEW **OLD** Figure 1

1. Remove carriage end cover, paper table and related parts.
2. Remove platen detent arm spring (02-44). This will remove detent arm tension from cam surface.
3. Using duckbill pliers, bend and break the old cam to remove from shaft (02-165). Remove all remaining parts of the old link & cam asm.
4. Install new type asm. but do not put cam over shaft until detent release bellcrank (02-70) has been attached to link asm. Bellcrank should be removed from old link asm.
5. After bellcrank is attached to link, push cam part of the asm. over the shaft. It may be necessary to use duckbill pliers to place cam on shaft.
6. Reinstall detent arm spring (02-44).
7. Replace all parts removed in step one.

PARTS REQUIRED:

MECH/REF		PART NO.	DESCRIPTION	QTY.	PRICE
02	64	1231806	Link & Cam Asm.	1	.70

161 SAFETY

12-15-76

Model C

SUBJECT: Safety Exposure

SAFETY LOCATION: Some early level two-wire Model C typewriters (Standard below S/N 1227675 and "Executive" typewriters below S/N 2032131) have the green wire (ground) from the inner plug cut and capped. This wire must not be reconnected to ground. The inner plug may be shorted internally (Fig. 1).

When the machine requires grounding, current level 3-wire linecord B/M must be used (8' cord P/N 1287288/13' cord P/N 1287289).

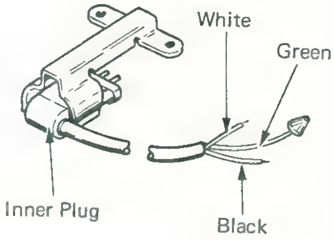


Figure 1

Note: The cut wire should be placed under the motor leads so it will not interfere with the decelerator arm.

162 SERVICE INFORMATION

5-4-77

MODEL(S): A, B & C

SUBJECT: Complete Sets Of Ground Type — Obsolete

PURPOSE: Complete sets of ground typebars for Models A, B and early C are no longer available for field replacement.

SOLUTION: When replacing a complete set of type on machines with ground type, it will be necessary to order an unground set of type with segment.

Individual ground typebar replacements will still be available.

1. P/Ns 1271102 and 1077094 (sets of ground type for Models A, B & C) are replaced by P/N 1268332 (includes segment).

Procedure for ordering remains the same. Refer to Type Catalog (F/N 241-5687-3).

CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12],Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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163 **SERVICE INFORMATION** 11-1-78

Model(s): A, B, C (Revised) 12-13-78

SUBJECT: Part Numbers For Painted Cover Parts

New part numbers for painted cover parts for Models A, B, and C Electric Typewriters are effective immediately.

1. Provide individual part numbers for each color of the most commonly used painted cover parts for Models A, B and C. Eliminate the need to specify color when ordering these parts. (Some low usage cover parts will require color to be specified.)
2. Only orders using the new part number can be accepted by the Parts Distribution system. Orders previously entered but not yet filled must be resubmitted using the new part number. Existing orders using the old part number will be cancelled.
3. Use charts (Fig. 1 and 2) to order painted cover parts.
4. Colors other than those listed will be available on an SER only.
5. Should you require ordering assistance for a painted cover part not listed in these charts, contact Lexington CE Product Services.
6. Regular orders require 15 to 20 working days. Emergency orders should be submitted only for "machine down" situations.

PAINTED COVER PARTS (MODEL C)

		MECH	REF.	Opal Gray P/N	Sapphire Blue P/N	Topaz Bronze P/N	Emerald Green P/N	Garnet Rose P/N	Onyx Blue P/N	Sdstone Beige P/N	Raven Black P/N	Specify Color P/N
TOP COVER	13"-24"	04	22	1303548	1303549	1303550	1303551	1303552	1303553	1303554	1303555	
	30"	04	22									1303556
	Check Writer	41	09									1303575
	Vis. Index	52	56									1303575
	Leading Edge	47	18									1303576
COVER CONVERSION B/M												
	13" Std.	04	87	1270891	1270894	1270892	1270893	1270895	1270896	1271931	1272691	
	17" Std.	04	87	1271104	1271107	1271105	1271106	1271108	1271109	1271932	1272692	
	13" Exec.	04	87	1271110	1271111	1271112	1271113	1271114	1271115	1271933	1272693	
	17" Exec.	04	87	1271116	1271117	1271118	1271119	1271120	1271121	1271934	1272694	
END COVER												
	LH Std./Exec.	04	08	1303600	1303601	1303602	1303603	1303604	1303605	1303606	1303607	
	RH Std /Exec	04	08	1303608	1303609	1303610	1303611	1303612	1303613	1303614	1303615	
	LH Check Writer	41	14	1303616	1303617	1303618	1303619	1303620	1303621	1303622	1303623	
	RH Check Writer	41	27	1303624	1303625	1303626	1303627	1303628	1303629	1303630	1303631	
	LH Pinfeed	49	23	1303633	1303634	1303635	1303636	1303637	1303638	1303639	1303640	
	RH Pinfeed	49	12	1303641	1303642	1303643	1303644	1303645	1303646	1303647	1303648	
	LH Waybill	42	24									1303632
	LH Vis Index	52	79									1303649
	RH Vis Index	52	40									1303650
	LH Card Positioning	43	02									1303632
REAR COVER												
	13" 24"	04	20	1303557	1303558	1303559	1303560	1303561	1303562	1303563	1303564	
	30"	04	20									1303565
REAR PAPER TABLE												
	13"	02	04	1303651	1303652	1303653	1303654	1303655	1303656	1303657	1303658	
	17"	02	04	1303659	1303660	1303661	1303662	1303663	1303664	1303665	1303666	
	20"	02	04	1303667	1303668	1303669	1303670	1303671	1303672	1303673	1303674	
	24"	02	04	1303675	1303676	1303677	1303678	1303679	1303680	1303681	1303682	
	30"	02	04	1303683	1303684	1303685	1303686	1303687	1303688	1303689	1303690	
	13" Check Writer	41	45									1263577
	17" Check Writer	41	45									1263578
	20" Check Writer	41	45									1263579
	12" Lift Platen	33	101								1093899	
	16" Lift Platen	33	101								1095062	
	12" Lift Platen Pin Feed	50	66								1107656	
	16" Lift Platen Pin Feed	50	66								1107655	
BOTTOM CASE	Std. And Exec	04	21	1303566	1303567	1303568	1303569	1303570	1303571	1303572	1303573	
	Lift Platen	46	82									1303574
				Brown	Dark Gray	Dark Green	Dark Blue				Raven Black	Specify Color
KEYPLATE	84 Character	04	18									1303577
	86 Character	04	18	1303578	1303579	1303580	1303581				1303582	
	88 Character	04	18	1303583	1303584	1303585	1303586				1303587	
	86 Character Decimal Tab	30	224	1303588	1303589	1303590	1303591				1303592	
	88 Character Decimal Tab	30	224	1303593	1303594	1303595	1303596				1303597	
	86 Character Palm Tab	48	001									1303598
	88 Character Palm Tab	48	001									1303599

Figure 1

(Continued)

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END COVERS DOVE GRAY (MODELS A & B)

TYPE	MODEL	MECH	REF.	P/N
A	LH Std.	04	01	1073676
A	LH Exec.	04	01	1073678
A	RH Std	04	07	1073675
A	RH Exec.	04	07	1073677
A	LH Check Writer	41	129	1078543
A	RH Check Writer	41	120	1078549
B	LH Std. And Exec.	04	01	1303706
B	RH Std. And Exec.	04	07	1303707
B	LH Decimal Tab	30	182	1303708
B	RH Decimal Tab	30	184	1303709
B	LH Check Writer	41	01	1303710
B	RH Check Writer	41	10	1303711
B	LH Clamp Type	42	36	1303712
B	LH Dual Purpose	43	16	1303712
B	RH Formsline Selector	45	01	1303713
B	LH Vis. Index	52	37	1303714
B	RH Vis. Index	52	25	1303715
B	Formsline Frame	45	04	1265745
B	Formsline Cover	45	15	1265741
B	Formsline Stop Cover	45	20	1106046

KEYPLATES CHARCOAL (MODELS A & B)

TYPE	MODEL	MECH	REF.	P/N
A&B	88 Char. 0 Pos. 4th Row	04	29	1303716
A&B	84 Char. Exec.	04	29	1303717
A&B	88 Char. Exec.	04	29	1303718
A&B	84 Char. Std	04	29	1303719
A&B	88 Char. Std.	04	29	1303720
A&B	84 Char. Dec. Tab	30	137	1303721
A&B	88 Char. Dec. Tab	30	137	1303722
A&B	88 Char. Part Carr. Ret.	34	113	1303724
A&B	88 Char. Palm Part CR	34	113	1303725
A&B	86 Char. 0 Pos. Toll Bill	35	10	1303726
A&B	86 Char. 43 Pos. Toll Bill	35	10	1303727
A&B	84 Char. LH Palm Tab	48	02	1303728
A&B	88 Char. LH Palm Tab	48	02	1303729
A&B	84 Char. RH Palm Tab	48	18	1303723

REAR PAPER TABLE (MODELS A & B)

TYPE	MODEL	MECH	REF.	CHARCOAL	BLACK
B	12"	02	21	1108890	X
B	16"	02	21	1108898	X
B	20"	02	21	1108899	X
B	24"	02	21	1108963	X
B	30"	02	21	1108964	X
B	12" Check Writer	41	03	1108890	X
B	16" Check Writer	41	03	1108898	X
B	20" Check Writer	41	03	1108899	X
B	12" Lift Platen	30	42	X	1093899
B	16" Lift Platen	30	42	X	1095062
B	12" Lift Platen Pin Feed	50	05	X	1107656
B	16" Lift Platen – Pin Feed	50	05	X	1107655
A	12"	02	187	X	1077477
A	16"	02	187	X	1077478
A	20"	02	187	X	1077479
A	24"	02	187	X	1078447
A	Toll Biller	35	75	X	1093615

MAIN COVERS (MODELS A & B)

TYPE	MODEL	MECH	REF.	DOVE GRAY	CHARCOAL
A&B	Top Cover Only	04	13	1303692	X
A&B	Front And Top Covers Exec. Carbon Ribbon	04	28	1261010	X
A&B	Front And Top Covers Std. Fabric Ribbon	04	28	1261604	X
A&B	Front And Top Covers 30" Fabric Ribbon	04	28	1261603	X
A&B	Rear Case Std. & Exec.	04	19	1303693	X
A&B	Rear Case 30"	04	19	1303694	X
A&B	Adapter Bracket Std. And Exec.	04	64	X	1303695
A&B	Adapter Bracket 30"	04	64	X	1303696
A&B	Carb. Rib. Magazine LH	04	04	1303697	X
A&B	Carb. Rib. Magazine RH	04	12	1303698	X
A&B	Rail Brace 30" LH	02	16	1303701	X
A&B	Rail Brace 30" RH	02	03	1303702	X
A&B	Rail Brace 20"-24"	02	19	1303703	X
A&B	Rail Support 30" RH	02	11	1303704	X
A&B	Rail Support 30" LH	02	15	1303705	X
B	Adapter Bracket B I/O	32	94	X	1303699
B	Mag Unit Cover B I/O	32	106	X	1303700

Figure 2

164 SERVICE INFORMATION

11-1-78

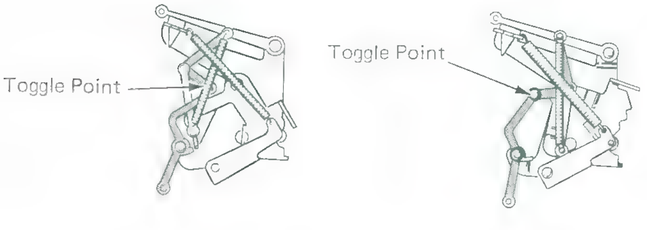
Model(s): C, D

SUBJECT: Ribbon Lift Mechanism — Toggle Arms Out Of Position

PURPOSE: Some ribbon lift mechanisms (14-48) have the toggle arms incorrectly assembled (Fig. 1). The mechanism will not function properly in this condition. The mechanism is **NOT** defective.

SOLUTION: Restore arms to the correct position. Holding the mechanism with the shaft pointing away from you:

1. Unhook spring (14-82), allowing the detent arm to fall free (Fig. 2).
2. Rotate shaft and detent plate assembly fully counterclockwise to maximum position (Fig. 2).
3. Apply slight pressure at toggle point (Fig. 2) in direction indicated by arrow. This will cause the linkage to move over center to the proper position.
4. Restore shaft and detent plate assembly to correct position (Fig. 1), and reconnect detent arm spring.



Incorrect Position

Correct Position

Figure 1

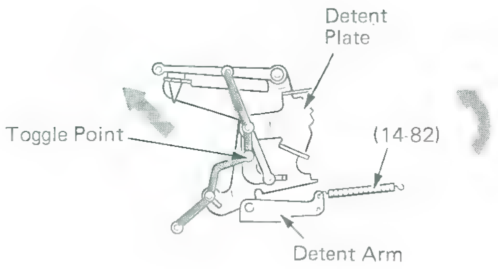


Figure 2

Note: This condition should appear only on field replacement parts. No reports have been received of new machines with this problem.

165 RELIABILITY

11-1-78

Model(s): D1, D4

SUBJECT: Tab Lever Adjusting Plate Breakage

Breakage of the tab lever adjusting plate may occur as a result of cracks in the material of the plate.

PARTS REQUIRED:

MECH/REF	PART NO.	DESCRIPTION	QTY.	PRICE
18 103	1171557	Adjusting Plate	1	.10

PARTS INFORMATION: Stocks of P/N 1171557 should be scrapped and reordered as needed.

Use Service Code 32

This CEM Expires 10-1-79

CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12], Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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A complete set of current Typebar CEMs consists of the Combined Service Information booklet (F/N S241-6171-0), dated February, 1980, CEMs starting on page 1 (dated April 9, 1980) and the Technical Information Index found in the back of the Part Number Price List (F/N 241-5230-5).

163 SERVICE INFORMATION

11-1-78

Model(s): A, B, C

Revised (1-16-80)

SUBJECT: Part Numbers For Painted Cover Parts

New part numbers for painted cover parts for Models A, B, and C Electric Typewriters are effective immediately.

1. Provide individual part numbers for each color of the most commonly used painted cover parts for Models A, B and C. Eliminate the need to specify color when ordering these parts. (Some low usage cover parts will require color to be specified.)
2. Only orders using the new part number can be accepted by the Parts Distribution system. Orders previously entered but not yet filled must be resubmitted using the new part number. Existing orders using the old part number will be cancelled.
3. Use charts (Fig. 1 and 2) to order painted cover parts.
4. Colors other than those listed will be available on an SER only.
5. Should you require ordering assistance for a painted cover part not listed in these charts, contact Lexington CE Product Services.
6. Regular orders require 15 to 20 working days. Emergency orders should be submitted only for "machine down" situations.

PAINTED COVER PARTS (MODEL C)

		MECH	REF.	Opal Gray P/N	Sapphire Blue P/N	Topaz Bronze P/N	Emerald Green P/N	Garnet Rose P/N	Onyx Blue P/N	Sdstone Beige P/N	Raven Black P/N	Specify Color P/N
TOP COVER	13"-24"	04	22	1303548	1303549	1303550	1303551	1303552	1303553	1303554	1303555	
	30"	04	22									1303556
	Check Writer	41	09									1303575
	Vis. Index	52	56									1303575
	Leading Edge	47	18									1303576
COVER CONVERSION B/M – UNIVERSAL	**13" – 24" Std. and Exec.**	04	87	1270891	1270894	1270892	1270893	1270895	1270896	1271931	1272691	
Includes all case sections, end covers, rear panel, platen knobs, and mounting hardware. Order keyplate, front panel (04-28), rear paper table, front paper table (02-08), and rail guards (02-72) separately as required.												
END COVER	LH Std./Exec.	04	08	1303600	1303601	1303602	1303603	1303604	1303605	1303606	1303607	
	RH Std./Exec.	04	08	1303608	1303609	1303610	1303611	1303612	1303613	1303614	1303615	
	LH Check Writer	41	14	1303616	1303617	1303618	1303619	1303620	1303621	1303622	1303623	
	RH Check Writer	41	27	1303624	1303625	1303626	1303627	1303628	1303629	1303630	1303631	
	LH Pinfeed	49	23	1303633	1303634	1303635	1303636	1303637	1303638	1303639	1303640	
	RH Pinfeed	49	12	1303641	1303642	1303643	1303644	1303645	1303646	1303647	1303648	
	LH Waybill	42	24									1303632
	LH Vis. Index	52	79									1303649
	RH Vis. Index	52	40									1303650
	LH Card Positioning	43	02									1303632
REAR COVER	13"-24"	04	20	1303557	1303558	1303559	1303560	1303561	1303562	1303563	1303564	
	30"	04	20									1303565
REAR PAPER TABLE	13"	02	04	1303651	1303652	1303653	1303654	1303655	1303656	1303657	1303658	
	17"	02	04	1303659	1303660	1303661	1303662	1303663	1303664	1303665	1303666	
	20"	02	04	1303667	1303668	1303669	1303670	1303671	1303672	1303673	1303674	
	24"	02	04	1303675	1303676	1303677	1303678	1303679	1303680	1303681	1303682	
	30"	02	04	1303683	1303684	1303685	1303686	1303687	1303688	1303689	1303690	
	13" Check Writer	41	45									1263577
	17" Check Writer	41	45									1263578
	20" Check Writer	41	45									1263579
	12" Lift Platen	33	101								1093899	
	16" Lift Platen	33	101								1095062	
	12" Lift Platen Pin Feed	50	66								1107656	
	16" Lift Platen Pin Feed	50	66								1107655	
BOTTOM CASE	Std. And Exec.	04	21	1303566	1303567	1303568	1303569	1303570	1303571	1303572	1303573	
	Lift Platen	46	82									1303574
				Brown	**Dark Gray**	**Dark Green**	**Dark Blue**				**Raven Black**	**Specify Color**
KEYPLATE	84 Character	04	18									1303577
	86 Character	04	18	1303578	1303579	1303580	1303581				1303582	
	88 Character	04	18	1303583	1303584	1303585	1303586				1303587	
	86 Character Decimal Tab	30	224	1303588	1303589	1303590	1303591				1303592	
	88 Character Decimal Tab	30	224	1303593	1303594	1303595	1303596				1303597	
	86 Character Palm Tab	48	001									1303598
	88 Character Palm Tab	48	001									1303599

Figure 1

(Continued)

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END COVERS DOVE GRAY (MODELS A & B)				
TYPE	MODEL	MECH	REF.	P/N
A	LH Std.	04	01	1073676
A	LH Exec	04	01	1073678
A	RH Std	04	07	1073675
A	RH Exec.	04	07	1073677
A	LH Check Writer	41	129	1078543
A	RH Check Writer	41	120	1078549
B	LH Std. And Exec.	04	01	1303706
B	RH Std. And Exec	04	07	1303707
B	LH Decimal Tab	30	182	1303708
B	RH Decimal Tab	30	184	1303709
B	LH Check Writer	41	01	1303710
B	RH Check Writer	41	10	1303711
B	LH Clamp Type	42	36	1303712
B	LH Dual Purpose	43	16	1303712
B	RH Formsline Selector	45	01	1303713
B	LH Vis Index	52	37	1303714
B	RH Vis Index	52	25	1303715
B	Formsline Frame	45	04	1265745
B	Formsline Cover	45	15	1265741
B	Formsline Stop Cover	45	20	1106046

KEYPLATES CHARCOAL (MODELS A & B)				
TYPE	MODEL	MECH	REF.	P/N
A&B	88 Char. 0 Pos. 4th Row	04	29	1303716
A&B	84 Char. Exec.	04	29	1303717
A&B	88 Char Exec	04	29	1303718
A&B	84 Char. Std.	04	29	1303719
A&B	88 Char Std.	04	29	1303720
A&B	84 Char. Dec Tab	30	137	1303721
A&B	88 Char. Dec Tab	30	137	1303722
A&B	88 Char Part Carr Ret	34	113	1303724
A&B	88 Char. Palm Part CR	34	113	1303725
A&B	86 Char. 0 Pos Toll Bill	35	10	1303726
A&B	86 Char 43 Pos. Toll Bill	35	10	1303727
A&B	84 Char. LH Palm Tab	48	02	1303728
A&B	88 Char. LH Palm Tab	48	02	1303729
A&B	84 Char. RH Palm Tab	48	18	1303723

REAR PAPER TABLE (MODELS A & B)					
TYPE	MODEL	MECH	REF.	CHARCOAL	BLACK
B	12"	02	21	1108890	X
B	16"	02	21	1108898	X
B	20"	02	21	1108899	X
B	24"	02	21	1108963	X
B	30"	02	21	1108964	X
B	12" Check Writer	41	03	1108890	X
B	16" Check Writer	41	03	1108898	X
B	20" Check Writer	41	03	1108899	X
B	12" Lift Platen	30	42	X	1093899
B	16" Lift Platen	30	42	X	1095062
B	12" Lift Platen Pin Feed	50	05	X	1107656
B	16" Lift Platen Pin Feed	50	05	X	1107655
A	12"	02	187	X	1077477
A	16"	02	187	X	1077478
A	20"	02	187	X	1077479
A	24"	02	187	X	1078447
A	Toll Biller	35	75	X	1093615

MAIN COVERS (MODELS A & B)					
TYPE	MODEL	MECH	REF.	DOVE GRAY	CHARCOAL
A&B	Top Cover Only	04	13	1303692	X
A&B	Front And Top Covers				
	.Exec Carbon Ribbon	04	28	1261010	X
A&B	Front And Top Covers				
	Std. Fabric Ribbon	04	28	1261604	X
A&B	Front And Top Covers				
	30" Fabric Ribbon	04	28	1261603	X
A&B	Rear Case Std. & Exec	04	19	1303693	X
A&B	Rear Case 30"	04	19	1303694	X
A&B	Adapter Bracket Std				
	And Exec.	04	64	X	1303695
A&B	Adapter Bracket 30"	04	64	X	1303696
A&B	Carb Rib. Magazine LH	04	04	1303697	X
A&B	Carb Rib Magazine RH	04	12	1303698	X
A&B	Rail Brace 30" LH	02	16	1303701	X
A&B	Rail Brace 30" RH	02	03	1303702	X
A&B	Rail Brace 20"-24"	02	19	1303703	X
A&B	Rail Support 30" RH	02	11	1303704	X
A&B	Rail Support 30" LH	02	15	1303705	X
B	Adapter Bracket B I/O	32	94	X	1303699
B	Mag Unit Cover B I/O	32	106	X	1303700

Figure 2

164 SERVICE INFORMATION

11 1-78

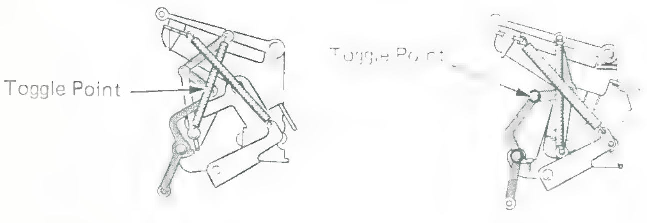
Model(s): C, D

SUBJECT: Ribbon Lift Mechanism — Toggle Arms Out Of Position

PURPOSE: Some ribbon lift mechanisms (14-48) have the toggle arms incorrectly assembled (Fig. 1). The mechanism will not function properly in this condition. The mechanism is NOT defective.

SOLUTION: Restore arms to the correct position. Holding the mechanism with the shaft pointing away from you:

1. Unhook spring (14-82), allowing the detent arm to fall free (Fig. 2).
2. Rotate shaft and detent plate assembly fully counterclockwise to maximum position (Fig. 2).
3. Apply slight pressure at toggle point (Fig. 2) in direction indicated by arrow. This will cause the linkage to move over center to the proper position.
4. Restore shaft and detent plate assembly to correct position (Fig. 1), and reconnect detent arm spring.



Incorrect Position

Correct Position

Figure 1

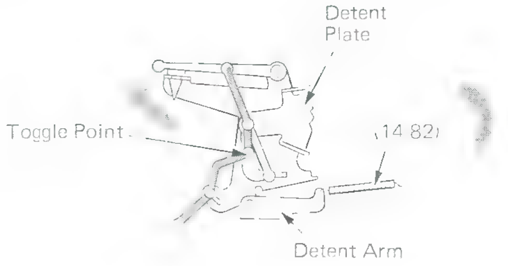


Figure 2

Note: This condition should appear only on field replacement parts. No reports have been received of new machines with this problem.

165 RELIABILITY

11-1-78

Model(s): D1, D4

SUBJECT: Tab Lever Adjusting Plate Breakage

Breakage of the tab lever adjusting plate may occur as a result of cracks in the material of the plate.

PARTS REQUIRED:

MECH/REF		PART NO.	DESCRIPTION	QTY.	PRICE
18	103	1171557	Adjusting Plate	1	.10

PARTS INFORMATION: Stocks of P/N 1171557 should be scrapped and reordered as needed.

Use Service Code 32

This CEM Expires 10-1-79

CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12],Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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166 SERVICE INFORMATION

7-18-79

(Revised) 3-26-80

Model(s): Typebar

SUBJECT: Power Rolls – Defective

Some October and November power rolls have been found defective. Power rolls bearing the date codes 108 or 118 (Figure 1) should be returned using the appropriate parts requisition form.

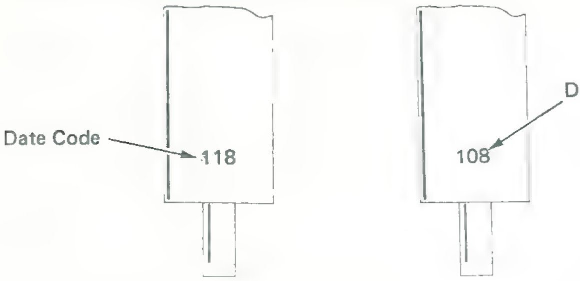


Figure 1

Note: Cutoff date for the return of October and November date coded power rolls is April 1, 1980. All power rolls not returned by this date shoud be scrapped.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Applicable Service Code

167 RELIABILITY

10-10-79

Model(s): D

SUBJECT: Ribbon Feed Spring – Breaking

PURPOSE: Some defective ribbon feed arm hubs (14-160) have been released with the hole drilled off center causing the ribbon feed spring (14-175) to break.

SYMPTOM: Ribbon feed spring breaks within days of replacement, and cause cannot be identified.

SOLUTION: Replace the feed arm hub and the spring.

MACHINES AFFECTED: Between S/N: 7051988–7067920 and 8620040– 8624799.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Service Code 32

This CEM Expires 3-31-80

168 SERVICE INFORMATION

10-10-79

Model(s): C, D

SUBJECT: APM Error

In Model C&D APM (F/N 241-5231-8), frame 130, the adjustment notes for 1/36 pitch B/S guide pin adjustment are reversed. 1/32 pitch adjustment notes are **correct.** Refer to C&D Service Manual (F/N 241-5665-1) for proper wording.

Make appropriate corrections. (This item will be printed in the C&D CSI until revision of the C&D APM.)

169 SERVICE INFORMATION

3-26-80

Model(s): A, B, C, D

SUBJECT: Typebars – Over Plated

SYMPTOM: Over-plating around the typebar fulcrum hole on field replacement typebars. The fulcrum rod does not fit through the typebar mounting hole with ease.

SOLUTION: Check for over-plating around the hole and,remove with a round file or other suitable tool.

170 SERVICE INFORMATION

3-26-80

Model(s): B

SUBJECT: Universal Front Paper Table – Redesigned

PURPOSE: Front paper tables (02-20) for the Model B typewriter have been redesigned. Pitch markings have been eliminated, and only one paper table is now required for each carriage length. Front paper tables are available only in flat black finish.

MECH/REF	PART NO.	DESCRIPTION	QTY.	PRICE
02 20	1116322	Front Paper Table – 12"	1	
	1116323	Front Paper Table – 16"	1	
	1116324	Front Paper Table – 20"	1	
	1116325	Front Paper Table – 24"	1	
	1116326	Front Paper Table – 30"	1	

Parts Information: Former level parts are no longer available.

171 SERVICE INFORMATION

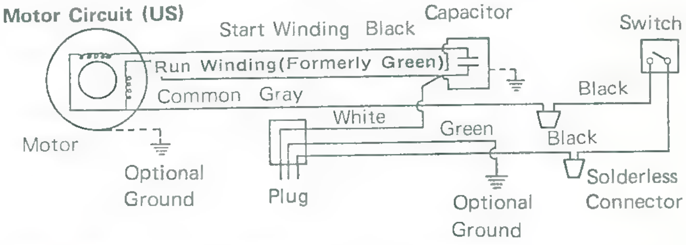
3-26-80

Model(s): C, D

SUBJECT: Service Manual – Incorrect Wiring Diagram

The first diagram of Figure 10, page 10 of Form No. 241-5665-1 is incorrect. The correct diagram can be found in the APM Form No. 241-5231-8, page 44, first picture, top left. Note this change in your Service Manual. The correct diagram is shown in Figure 1.

Motor Circuit (US)



Non-Double Insulated, Capacitor (S.P.S.T. Switch)

Figure 1

172 SERVICE INFORMATION

6-4-80

Model(s): Typebar

SUBJECT: Power Rolls, Defective – Dated 019

Some power rolls, date coded January, 1979 (019), are defective. Power rolls bearing this date that have not been installed should be returned as new defective to your BOPS or DCs using the appropriate parts requisition form.

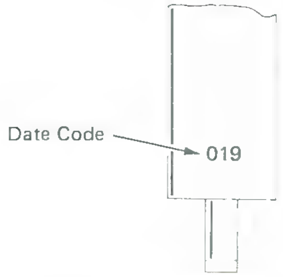


Figure 1

The cut-off date for the return of these power rolls is October 1, 1980. All power rolls not returned by this date should be scrapped.

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173

SERVICE INFORMATION

11-5-80

Model(s): A, B, C, D

SUBJECT: **Universal Bar — Removal Procedure**

PURPOSE: To provide an improved method of removing and replacing the universal bar asm.

UNIVERSAL BAR REMOVAL PROCEDURE

1. Unplug machine.
2. Remove front and rear cover, platen, deflector, right carriage end cover, reposition wire, ribbon lift guide and dust cover.
3. Remove margin reset bracket.
4. Disconnect the clevis from the escapement trip link and loosen the plate (06-8) screw allowing the plate to move freely.
5. Move carriage to the left while holding down the tab lever bracket until right hand trucks are visible.
6. Remove the two hexagonal screws and washers which hold the universal bar to the segment.
7. Turn the universal bar and remove between the rails.
8. To install, reverse procedure. (Be sure universal bar moves freely in the segment.)
9. The following adjustments should be checked after replacing parts:
    a. Universal bar (equal tripping point left, center, right)
    b. Universal bar adjustment plate
    c. Escapement trip link
    d. Ribbon lift guide
    e. Cardholders
    f. Repositioning indicator (C4-D4)

Note: This procedure is based on the removal of the universal bar from a Model D4 machine. The procedure can be used on any Typebar machine with minor modifications.

174

SERVICE INFORMATION

11-5-80

MODEL(S): Card D

SUBJECT: Feed Link Adjustment — Carbon Ribbon Spring Drive

PURPOSE: The proportional feed link (14-166) can interfere with proper adjustment of the feed link (APM Frame 162 -- APM F/N 241-5231.)

SOLUTION: Disconnect the proportional feed link when making the feed link adjustment. Note this change in your APM and service manual.

CEM Customer Engineering Memorandum

Typebar Typewriter

Model A1-A4 [11], Model B1-B4 [12],Model B I/O [14], Model C1-C4 [13], Model D1-D4 [15]

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166 SERVICE INFORMATION

7-18-79
(Revised) 3-26-80

Model(s): Typebar

SUBJECT: Power Rolls — Defective

Some October and November power rolls have been found defective. Power rolls bearing the date codes 108 or 118 (Figure 1) should be returned using the appropriate parts requisition form.

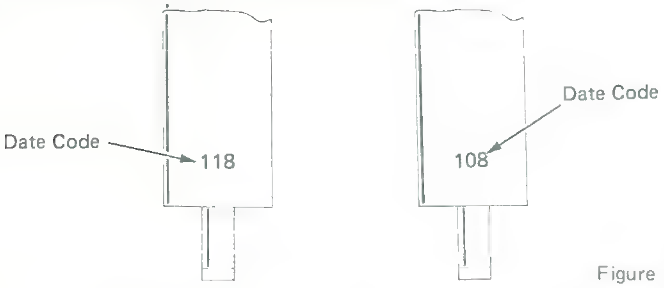


Figure 1

Note: Cutoff date for the return of October and November date coded power rolls is April 1, 1980. All power rolls not returned by this date shoud be scrapped.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Applicable Service Code

167 RELIABILITY

10-10-79

Model(s): D

SUBJECT: Ribbon Feed Spring — Breaking

PURPOSE: Some defective ribbon feed arm hubs (14-160) have been released with the hole drilled off center causing the ribbon feed spring (14-175) to break.

SYMPTOM: Ribbon feed spring breaks within days of replacement, and cause cannot be identified.

SOLUTION: Replace the feed arm hub and the spring.

MACHINES AFFECTED: Between S/N: 7051988—7067920 and 8620040—8624799.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

Use Service Code 32

This CEM Expires 3-31-80

168 SERVICE INFORMATION

10-10-79

Model(s): C, D

SUBJECT: APM Error

In Model C&D APM (F/N 241-5231-8), frame 130, the adjustment notes for 1/36 pitch B/S guide pin adjustment are reversed. 1/32 pitch adjustment notes **are correct.** Refer to C&D Service Manual (F/N 241-5665-1) for proper wording.

Make appropriate corrections. (This item will be printed in the C&D CSI until revision of the C&D APM.)

169 SERVICE INFORMATION

3-26-80

Model(s): A, B, C, D

SUBJECT: Typebars — Over Plated

SYMPTOM: Over-plating around the typebar fulcrum hole on field replacement typebars. The fulcrum rod does not fit through the typebar mounting hole with ease.

SOLUTION: Check for over-plating around the hole and remove with a round file or other suitable tool.

170 SERVICE INFORMATION

3-26-80

Model(s): B

SUBJECT: Universal Front Paper Table — Redesigned

PURPOSE: Front paper tables (02-20) for the Model B typewriter have been redesigned. Pitch markings have been eliminated, and only one paper table is now required for each carriage length. Front paper tables are available only in flat black finish.

MECH/REF	PART NO.	DESCRIPTION	QTY.	PRICE
02 20	1116322	Front Paper Table — 12"	1	
	1116323	Front Paper Table — 16"	1	
	1116324	Front Paper Table — 20"	1	
	1116325	Front Paper Table — 24"	1	
	1116326	Front Paper Table — 30"	1	

Parts Information: Former level parts are no longer available.

171 SERVICE INFORMATION

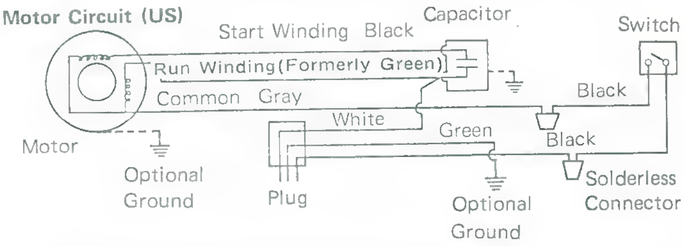
3-26-80

Model(s): C, D

SUBJECT: Service Manual — Incorrect Wiring Diagram

The first diagram of Figure 10, page 10 of Form No. 241-5665-1 is incorrect. The correct diagram can be found in the APM Form No. 241-5231-8, page 44, first picture, top left. Note this change in your Service Manual. The correct diagram is shown in Figure 1.

Motor Circuit (US)



Non-Double Insulated, Capacitor (S.P.S.T. Switch) Figure 1

TIMELY INFORMATION PROGRAM

3-26-80

Model(s): A, B, C, D

If experiencing repeated print problems on Typebar machines, do not overlook the top cover foam. If the foam is deteriorated, it may fall into the segment and restrict typebar movement. The foam can be removed and replacement is not necessary.

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163 **SERVICE INFORMATION** 11 1-78

Model(s): A, B, C Revised (1-16-80)

SUBJECT: Part Numbers For Painted Cover Parts

New part numbers for painted cover parts for Models A, B, and C Electric Typewriters are effective immediately.

1. Provide individual part numbers for each color of the most commonly used painted cover parts for Models A, B and C. Eliminate the need to specify color when ordering these parts. (Some low usage cover parts will require color to be specified.)
2. Only orders using the new part number can be accepted by the Parts Distribution system. Orders previously entered but not yet filled must be resubmitted using the new part number. Existing orders using the old part number will be cancelled.
3. Use charts (Fig. 1 and 2) to order painted cover parts.
4. Colors other than those listed will be available on an SER only.
5. Should you require ordering assistance for a painted cover part not listed in these charts, contact Lexington CE Product Services.
6. Regular orders require 15 to 20 working days. Emergency orders should be submitted only for "machine down" situations.

PAINTED COVER PARTS (MODEL C)

		MECH	REF.	Opal Gray P/N	Sapphire Blue P/N	Topaz Bronze P/N	Emerald Green P/N	Garnet Rose P/N	Onyx Blue P/N	Sdstone Beige P/N	Raven Black P/N	Specify Color P/N
TOP COVER	13"-24"	04	22	1303548	1303549	1303550	1303551	1303552	1303553	1303554	1303555	
	30"	04	22									1303556
	Check Writer	41	09									1303575
	Vis. Index	52	56									1303575
	Leading Edge	47	18									1303576
COVER CONVERSION B/M – UNIVERSAL	**13" – 24" Std. and Exec.**	04	87	1270891	1270894	1270892	1270893	1270895	1270896	1271931	1272691	
		04	87	1271104	1271107	1271105	1271106	1271108	1271109	1271932	1272692	
		04	87	1271110	1271111	1271112	1271113	1271114	1271115	1271933	1272693	
		04	87	1271116	1271117	1271118	1271119	1271120	1271121	1271934	1272694	

Includes all case sections, end covers, rear panel, platen knobs, and mounting hardware. Order keyplate, front panel (04-28), rear paper table, front paper table (02-08), and rail guards (02-72) separately as required.

		MECH	REF.	Opal Gray P/N	Sapphire Blue P/N	Topaz Bronze P/N	Emerald Green P/N	Garnet Rose P/N	Onyx Blue P/N	Sdstone Beige P/N	Raven Black P/N	Specify Color P/N
END COVER	LH Std./Exec	04	08	1303600	1303601	1303602	1303603	1303604	1303605	1303606	1303607	
	RH Std /Exec	04	08	1303608	1303609	1303610	1303611	1303612	1303613	1303614	1303615	
	LH Check Writer	41	14	1303616	1303617	1303618	1303619	1303620	1303621	1303622	1303623	
	RH Check Writer	41	27	1303624	1303625	1303626	1303627	1303628	1303629	1303630	1303631	
	LH Pinfeed	49	23	1303633	1303634	1303635	1303636	1303637	1303638	1303639	1303640	
	RH Pinfeed	49	12	1303641	1303642	1303643	1303644	1303645	1303646	1303647	1303648	
	LH Waybill	42	24									1303632
	LH Vis. Index	52	79									1303649
	RH Vis. Index	52	40									1303650
	LH Card Positioning	43	02									1303632
REAR COVER	13" 24"	04	20	1303557	1303558	1303559	1303560	1303561	1303562	1303563	1303564	
	30"	04	20									1303565
REAR PAPER TABLE	13"	02	04	1303651	1303652	1303653	1303654	1303655	1303656	1303657	1303658	
	17"	02	04	1303659	1303660	1303661	1303662	1303663	1303664	1303665	1303666	
	20"	02	04	1303667	1303668	1303669	1303670	1303671	1303672	1303673	1303674	
	24"	02	04	1303675	1303676	1303677	1303678	1303679	1303680	1303681	1303682	
	30"	02	04	1303683	1303684	1303685	1303686	1303687	1303688	1303689	1303690	
	13" Check Writer	41	45									1263577
	17" Check Writer	41	45									1263578
	20" Check Writer	41	45									1263579
	12" Lift Platen	33	101								1093899	
	16" Lift Platen	33	101								1095062	
	12" Lift Platen Pin Feed	50	66								1107656	
	16" Lift Platen Pin Feed	50	66								1107655	
BOTTOM CASE	Std And Exec	04	21	1303566	1303567	1303568	1303569	1303570	1303571	1303572	1303573	
	Lift Platen	46	82									1303574
KEYPLATE				Brown	Dark Gray	Dark Green	Dark Blue				Raven Black	Specify Color
	84 Character	04	18									1303577
	86 Character	04	18	1303578	1303579	1303580	1303581				1303582	
	88 Character	04	18	1303583	1303584	1303585	1303586				1303587	
	86 Character Decimal Tab	30	224	1303588	1303589	1303590	1303591				1303592	
	88 Character Decimal Tab	30	224	1303593	1303594	1303595	1303596				1303597	
	86 Character Palm Tab	48	001									1303598
	88 Character Palm Tab	48	001									1303599

Figure 1

(Continued)

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END COVERS DOVE GRAY (MODELS A & B)

TYPE	MODEL	MECH	REF.	P/N
A	LH Std	04	01	1073676
A	LH Exec.	04	01	1073678
A	RH Std	04	07	1073675
A	RH Exec	04	07	1073677
A	LH Check Writer	41	129	1078543
A	RH Check Writer	41	120	1078549
B	LH Std And Exec	04	01	1303706
B	RH Std And Exec	04	07	1303707
B	LH Decimal Tab	30	182	1303708
B	RH Decimal Tab	30	184	1303709
B	LH Check Writer	41	01	1303710
B	RH Check Writer	41	10	1303711
B	LH Clamp Type	42	36	1303712
B	LH Dual Purpose	43	16	1303712
B	RH Formsline Selector	45	01	1303713
B	LH Vis. Index	52	37	1303714
B	RH Vis. Index	52	25	1303715
B	Formsline Frame	45	04	1265745
B	Formsline Cover	45	15	1265741
B	Formsline Stop Cover	45	20	1106046

KEYPLATES CHARCOAL (MODELS A & B)

TYPE	MODEL	MECH	REF.	P/N
A&B	88 Char 0 Pos 4th Row	04	29	1303716
A&B	84 Char. Exec	04	29	1303717
A&B	88 Char. Exec	04	29	1303718
A&B	84 Char Std.	04	29	1303719
A&B	88 Char Std	04	29	1303720
A&B	84 Char Dec. Tab	30	137	1303721
A&B	88 Char Dec Tab	30	137	1303722
A&B	88 Char. Part Carr Ret	34	113	1303724
A&B	88 Char Palm Part CR	34	113	1303725
A&B	86 Char 0 Pos Toll Bill	35	10	1303726
A&B	86 Char 43 Pos Toll Bill	35	10	1303727
A&B	84 Char LH Palm Tab	48	02	1303728
A&B	88 Char. LH Palm Tab	48	02	1303729
A&B	84 Char. RH Palm Tab	48	18	1303723

REAR PAPER TABLE (MODELS A & B)

TYPE	MODEL	MECH	REF.	CHARCOAL	BLACK
B	12"	02	21	1108890	X
B	16"	02	21	1108898	X
B	20"	02	21	1108899	X
B	24"	02	21	1108963	X
B	30"	02	21	1108964	X
B	12" Check Writer	41	03	1108890	X
B	16" Check Writer	41	03	1108898	X
B	20" Check Writer	41	03	1108899	X
B	12" Lift Platen	30	42	X	1093899
B	16" Lift Platen	30	42	X	1095062
B	12" Lift Platen Pin Feed	50	05	X	1107656
B	16" Lift Platen Pin Feed	50	05	X	1107655
A	12"	02	187	X	1077477
A	16"	02	187	X	1077478
A	20"	02	187	X	1077479
A	24"	02	187	X	1078447
A	Toll Biller	35	75	X	1093615

MAIN COVERS (MODELS A & B)

TYPE	MODEL	MECH	REF.	DOVE GRAY	CHARCOAL
A&B	Top Cover Only	04	13	1303692	X
A&B	Front And Top Covers				
	.Exec. Carbon Ribbon	04	28	1261010	X
A&B	Front And Top Covers				
	Std. Fabric Ribbon	04	28	1261604	X
A&B	Front And Top Covers				
	30" Fabric Ribbon	04	28	1261603	X
A&B	Rear Case Std. & Exec.	04	19	1303693	X
A&B	Rear Case 30"	04	19	1303694	X
A&B	Adapter Bracket Std.				
	And Exec	04	64	X	1303695
A&B	Adapter Bracket 30"	04	64	X	1303696
A&B	Carb. Rib. Magazine LH	04	04	1303697	X
A&B	Carb. Rib. Magazine RH	04	12	1303698	X
A&B	Rail Brace 30" LH	02	16	1303701	X
A&B	Rail Brace 30" RH	02	03	1303702	X
A&B	Rail Brace 20"-24"	02	19	1303703	X
A&B	Rail Support 30" RH	02	11	1303704	X
A&B	Rail Support 30" LH	02	15	1303705	X
B	Adapter Bracket B I/O	32	94	X	1303699
B	Mag Unit Cover B I/O	32	106	X	1303700

Figure 2

164 **SERVICE INFORMATION** 11-1-78

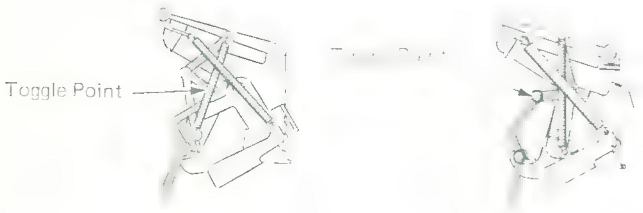
Model(s): C, D

SUBJECT: Ribbon Lift Mechanism — Toggle Arms Out Of Position

PURPOSE: Some ribbon lift mechanisms (14-48) have the toggle arms incorrectly assembled (Fig. 1). The mechanism will not function properly in this condition. The mechanism is NOT defective.

SOLUTION: Restore arms to the correct position. Holding the mechanism with the shaft pointing away from you:

1. Unhook spring (14-82), allowing the detent arm to fall free (Fig. 2).
2. Rotate shaft and detent plate assembly fully counterclockwise to maximum position (Fig. 2).
3. Apply slight pressure at toggle point (Fig. 2) in direction indicated by arrow. This will cause the linkage to move over center to the proper position.
4. Restore shaft and detent plate assembly to correct position (Fig. 1), and reconnect detent arm spring.



Incorrect Position

Correct Position

Figure 1

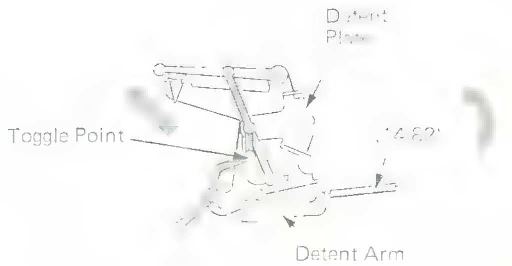


Figure 2

Note: This condition should appear only on field replacement parts. No reports have been received of new machines with this problem.

165 **RELIABILITY** 11-1-78

Model(s): D1, D4

SUBJECT: Tab Lever Adjusting Plate Breakage

Breakage of the tab lever adjusting plate may occur as a result of cracks in the material of the plate.

PARTS REQUIRED:

MECH/REF	PART NO.	DESCRIPTION	QTY.	PRICE
18 103	1171557	Adjusting Plate	1	.10

PARTS INFORMATION: Stocks of P/N 1171557 should be scrapped and reordered as needed.

Use Service Code 32

This CEM Expires 10-1-79

A complete set of current Typebar CEMs consists of the Combined Service Information booklet (F/N S241-6171-0), dated February, 1980, CEMs starting on page 1 (dated April 9, 1980) and the Technical Information Index found in the back of the Part Number Price List (F/N 241-5230-5).

163 **SERVICE INFORMATION** 11-1-78

Model(s): A, B, C Revised (1-16-80)

SUBJECT:
Part Numbers For Painted Cover Parts

New part numbers for painted cover parts for Models A, B, and C Electric Typewriters are effective immediately.

1. Provide individual part numbers for each color of the most commonly used painted cover parts for Models A, B and C. Eliminate the need to specify color when ordering these parts. (Some low usage cover parts will require color to be specified.)
2. Only orders using the new part number can be accepted by the Parts Distribution system. Orders previously entered but not yet filled must be resubmitted using the new part number. Existing orders using the old part number will be cancelled.
3. Use charts (Figure 1 and 2) to order painted cover parts.
4. Colors other than those listed will be available on an SER only.
5. Should you require ordering assistance for a painted cover part not listed in these charts, contact Lexington CE Product Services.
6. Regular orders require 15 to 20 working days. Emergency orders should be submitted only for "machine down" situations.

PAINTED COVER PARTS (MODEL C)

		MECH	REF.	Opal Gray P/N	Sapphire Blue P/N	Topaz Bronze P/N	Emerald Green P/N	Garnet Rose P/N	Onyx Blue P/N	Sdstone Beige P/N	Raven Black P/N	Specify Color P/N
TOP COVER	13"-24"	04	22	1303548	1303549	1303550	1303551	1303552	1303553	1303554	1303555	
	30"	04	22									1303556
	Check Writer	41	09									1303575
	Vis. Index	52	56									1303575
	Leading Edge	47	18									1303576
COVER CONVERSION B/M – UNIVERSAL	**13" – 24" Std. and Exec.**	04	87	1270891	1270894	1270892	1270893	1270895	1270896	1271931	1272691	
Includes all case sections, end covers, rear panel, platen knobs, and mounting hardware. Order keyplate, front panel (04-28), rear paper table, front paper table (02-08), and rail guards (02-72) separately as required.												
END COVER	LH Std./Exec.	04	08	1303600	1303601	1303602	1303603	1303604	1303605	1303606	1303607	
	RH Std./Exec	04	08	1303608	1303609	1303610	1303611	1303612	1303613	1303614	1303615	
	LH Check Writer	41	14	1303616	1303617	1303618	1303619	1303620	1303621	1303622	1303623	
	RH Check Writer	41	27	1303624	1303625	1303626	1303627	1303628	1303629	1303630	1303631	
	LH Pinfeed	49	23	1303633	1303634	1303635	1303636	1303637	1303638	1303639	1303640	
	RH Pinfeed	49	12	1303641	1303642	1303643	1303644	1303645	1303646	1303647	1303648	
	LH Waybill	42	24									1303632
	LH Vis. Index	52	79									1303649
	RH Vis. Index	52	40									1303650
	LH Card Positioning	43	02									1303632
REAR COVER	13"-24"	04	20	1303557	1303558	1303559	1303560	1303561	1303562	1303563	1303564	
	30"	04	20									1303565
REAR PAPER TABLE	13"	02	04	1303651	1303652	1303653	1303654	1303655	1303656	1303657	1303658	
	17"	02	04	1303659	1303660	1303661	1303662	1303663	1303664	1303665	1303666	
	20"	02	04	1303667	1303668	1303669	1303670	1303671	1303672	1303673	1303674	
	24"	02	04	1303675	1303676	1303677	1303678	1303679	1303680	1303681	1303682	
	30"	02	04	1303683	1303684	1303685	1303686	1303687	1303688	1303689	1303690	
	13" Check Writer	41	45									1263577
	17" Check Writer	41	45									1263578
	20" Check Writer	41	45									1263579
	12" Lift Platen	33	101								1093899	
	16" Lift Platen	33	101								1095062	
	12" Lift Platen Pin Feed	50	66								1107656	
	16" Lift Platen Pin Feed	50	66								1107655	
BOTTOM CASE	Std. And Exec.	04	21	1303566	1303567	1303568	1303569	1303570	1303571	1303572	1303573	
	Lift Platen	46	82									1303574
KEYPLATE				Brown	Dark Gray	Dark Green	Dark Blue				Raven Black	Specify Color
	84 Character	04	18									1303577
	86 Character	04	18	1303578	1303579	1303580	1303581				1303582	
	88 Character	04	18	1303583	1303584	1303585	1303586				1303587	
	86 Character Decimal Tab	30	224	1303588	1303589	1303590	1303591				1303592	
	88 Character Decimal Tab	30	224	1303593	1303594	1303595	1303596				1303597	
	86 Character Palm Tab	48	001									1303598
	88 Character Palm Tab	48	001									1303599

Figure 1

Continued

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(CEM No. 163 Continued)

END COVERS DOVE GRAY (MODELS A & B)

TYPE	MODEL	MECH	REF.	P/N
A	LH Std.	04	01	1073676
A	LH Exec.	04	01	1073678
A	RH Std.	04	07	1073675
A	RH Exec.	04	07	1073677
A	LH Check Writer	41	129	1078543
A	RH Check Writer	41	120	1078549
B	LH Std. And Exec.	04	01	1303706
B	RH Std. And Exec.	04	07	1303707
B	LH Decimal Tab	30	182	1303708
B	RH Decimal Tab	30	184	1303709
B	LH Check Writer	41	01	1303710
B	RH Check Writer	41	10	1303711
B	LH Clamp Type	42	36	1303712
B	LH Dual Purpose	43	16	1303712
B	RH Formsline Selector	45	01	1303713
B	LH Vis. Index	52	37	1303714
B	RH Vis. Index	52	25	1303715
B	Formsline Frame	45	04	1265745
B	Formsline Cover	45	15	1265741
B	Formsline Stop Cover	45	20	1106046

KEYPLATES CHARCOAL (MODELS A & B)

TYPE	MODEL	MECH	REF.	P/N
A&B	88 Char. 0 Pos. 4th Row	04	29	1303716
A&B	84 Char. Exec.	04	29	1303717
A&B	88 Char. Exec.	04	29	1303718
A&B	84 Char. Std.	04	29	1303719
A&B	88 Char. Std.	04	29	1303720
A&B	84 Char. Dec. Tab	30	137	1303721
A&B	88 Char. Dec. Tab	30	137	1303722
A&B	88 Char. Part Carr. Ret	34	113	1303724
A&B	88 Char. Palm Part CR	34	113	1303725
A&B	86 Char. 0 Pos. Toll Bill	35	10	1303726
A&B	86 Char. 43 Pos Toll Bill	35	10	1303727
A&B	84 Char. LH Palm Tab	48	02	1303728
A&B	88 Char. LH Palm Tab	48	02	1303729
A&B	84 Char. RH Palm Tab	48	18	1303723

REAR PAPER TABLE (MODELS A & B)

TYPE	MODEL	MECH	REF.	CHARCOAL	BLACK
B	12"	02	21	1108890	X
B	16"	02	21	1108898	X
B	20"	02	21	1108899	X
B	24"	02	21	1108963	X
B	30"	02	21	1108964	X
B	12" Check Writer	41	03	1108890	X
B	16" Check Writer	41	03	1108898	X
B	20" Check Writer	41	03	1108899	X
B	12" Lift Platen	30	42	X	1093899
B	16" Lift Platen	30	42	X	1095062
B	12" Lift Platen – Pin Feed	50	05	X	1107656
B	16" Lift Platen – Pin Feed	50	05	X	1107655
A	12"	02	187	X	1077477
A	16"	02	187	X	1077478
A	20"	02	187	X	1077479
A	24"	02	187	X	1078447
A	Toll Biller	35	75	X	1093615

MAIN COVERS (MODELS A & B)

TYPE	MODEL	MECH	REF.	DOVE GRAY	CHARCOAL
A&B	Top Cover Only	04	13	1303692	X
A&B	Front And Top Covers				
	.Exec. Carbon Ribbon	04	28	1261010	X
A&B	Front And Top Covers				
	Std. Fabric Ribbon	04	28	1261604	X
A&B	Front And Top Covers				
	30" Fabric Ribbon	04	28	1261603	X
A&B	Rear Case Std. & Exec.	04	19	1303693	X
A&B	Rear Case 30"	04	19	1303694	X
A&B	Adapter Bracket Std.				
	And Exec.	04	64	X	1303695
A&B	Adapter Bracket 30"	04	64	X	1303696
A&B	Carb. Rib. Magazine LH	04	04	1303697	X
A&B	Carb. Rib. Magazine RH	04	12	1303698	X
A&B	Rail Brace 30" LH	02	16	1303701	X
A&B	Rail Brace 30" RH	02	03	1303702	X
A&B	Rail Brace 20"-24"	02	19	1303703	X
A&B	Rail Support 30" RH	02	11	1303704	X
A&B	Rail Support 30" LH	02	15	1303705	X
B	Adapter Bracket B I/O	32	94	X	1303699
B	Mag Unit Cover B I/O	32	106	X	1303700

164 SERVICE INFORMATION

11-1-78

Model(s): C, D

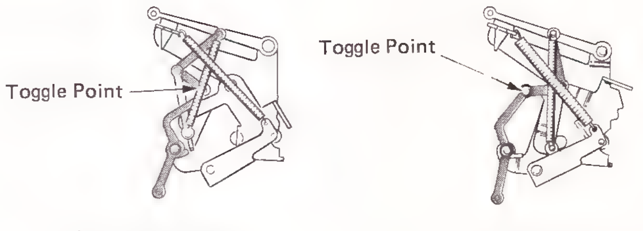
SUBJECT:
Ribbon Lift Mechanism – Toggle Arms Out Of Position

PURPOSE:
Some ribbon lift mechanisms (14-48) have the toggle arms incorrectly assembled (Figure 1). The mechanism will not function properly in this condition. The mechanism is NOT defective.

SOLUTION:
Restore arms to the correct position. Holding the mechanism with the shaft pointing away from you:

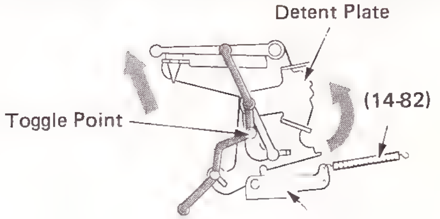
1. Unhook spring (14-82), allowing the detent arm to fall free (Figure 2).
2. Rotate shaft and detent plate assembly fully counterclockwise to maximum position (Figure 2).
3. Apply slight pressure at toggle point (Figure 2) in direction indicated by arrow. This will cause the linkage to move over center to the proper position.
4. Restore shaft and detent plate assembly to correct position (Figure 1), and reconnect detent arm spring.

Figure 2



Incorrect Position

Correct Position



NOTE: This condition should appear only on field replacement parts. No reports have been received of new machines with this problem.

165 RELIABILITY

11-1-78

Model(s): D1, D4

SUBJECT:
Tab lever Adjusting Plate Breakage

Breakage of the tab lever adjusting plate may occur as a result of cracks in the material of the plate.

PARTS REQUIRED:

MECH/REF	PART NO.	DESCRIPTION	QTY.
18 103	1171557	Adjusting Plate	1

PARTS INFORMATION:
Stocks of P/N 1171557 should be scrapped and reordered as needed.

Use Service Code 32 This CEM Expires 10-1-79

166 SERVICE INFORMATION

7-18-79
Revised) 3-26-80

Model(s): Typebar

SUBJECT: POWER ROLLS – DEFECTIVE

Some October and November power rolls have been found defective. Power rolls bearing the date codes 108 or 118 (Figure 1) should be returned using the appropriate parts requisition form.

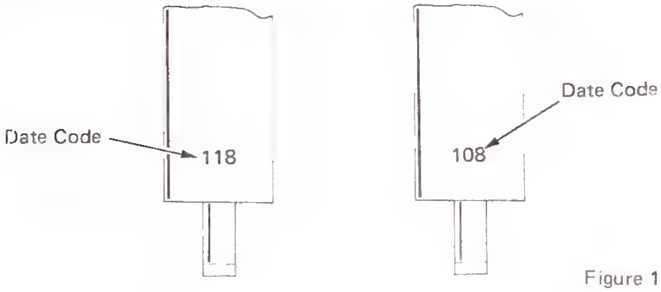


Figure 1

NOTE: Cutoff date for the return of October and November date coded power rolls is April 1, 1980. All power rolls not returned by this date shoud be scrapped.

Use Applicable Service Code

167 RELIABILITY

10-10-79

Model(s): D

SUBJECT: RIBBON FEED SPRING – BREAKING

PURPOSE:
Some defective ribbon feed arm hubs (14-160) have been released with the hole drilled off center causing the ribbon feed spring (14-175) to break.

SYMPTOM:
Ribbon feed spring breaks within days of replacement, and cause cannot be identified.

SOLUTION:
Replace the feed arm hub and the spring.

MACHINES AFFECTED:
Between S/N: 7051988–7067920 and 8620040– 8624799.

Use Service Code 32 This CEM Expires 3-31-80

168 SERVICE INFORMATION

10-10-79

Model(s): C,D

SUBJECT: APM ERROR

In Model C&D APM (F/N 241-5231-8), frame 130, the adjustment notes for 1/36 pitch B/S guide pin adjustment are reversed. 1/32 pitch adjustment notes ARE CORRECT. Refer to C&D Service Manual (F/N 241-5665-1) for proper wording.

Make appropriate corrections. (This item will be printed in the C&D CSI until revision of the C&D APM.)

169 SERVICE INFORMATION

3-26-80

Model(s): A,B,C,D

SUBJECT: TYPEBARS – OVER PLATED

SYMPTOM:
Over-plating around the typebar fulcrum hole on field replacement typebars. The fulcrum rod does not fit through the typebar mounting hole with ease.

SOLUTION:
Check for over-plating around the hole and remove with a round file or other suitable tool.

170 SERVICE INFORMATION

3-26-80

Model(s): B

SUBJECT: UNIVERSAL FRONT PAPER TABLE – REDESIGNED

PURPOSE:
Front paper tables (02-20) for the Model B typewriter have been redesigned. Pitch markings have been eliminated, and only one paper table is now required for each carriage length. Front paper tables are available only in flat black finish.

MECH/REF	PART NO.	DESCRIPTION	QTY.
02 20	1116322	Front Paper Table – 12″	1
	1116323	Front Paper Table – 16″	1
	1116324	Front Paper Table – 20″	1
	1116325	Front Paper Table – 24″	1
	1116326	Front Paper Table – 30″	1

PARTS INFORMATION:
Former level parts are no longer available.

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171 SERVICE INFORMATION

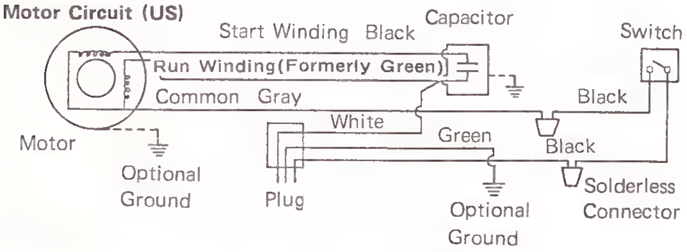
3-26-80

Model(s); C,D

SUBJECT: SERVICE MANUAL — INCORRECT WIRING DIAGRAM

The first diagram of Figure 10, page 10 of Form No. 241-5665-1 is incorrect. The correct diagram can be found in the APM Form No. 241-5231-8, page 44, first picture, top left. Note this change in your Service Manual. The correct diagram is shown in Figure 1.

Motor Circuit (US)



Non-Double Insulated, Capacitor (S.P.S.T. Switch)

Figure 1

172 SERVICE INFORMATION

6-4-80

Model(s): Typebar

SUBJECT: POWER ROLLS, DEFECTIVE — DATED 019

Some power rolls, date coded January, 1979 (019), are defective. Power rolls bearing this date that have not been installed should be returned as new defective to your BOPS or DCs using the appropriate parts requisition form.

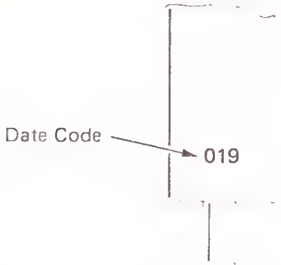


Figure 1

The cut-off date for the return of these power rolls is October 1, 1980. All power rolls not returned by this date should be scrapped.

173 SERVICE INFORMATION

11-5-80

Model(s); A,B,C,D

SUBJECT: UNIVERSAL BAR — REMOVAL PROCEDURE

PURPOSE:
To provide an improved method of removing and replacing the universal bar asm.

UNIVERSAL BAR REMOVAL PROCEDURE

1. Unplug machine.
2. Remove front and rear cover, platen, deflector, right carriage end cover, reposition wire, ribbon lift guide and dust cover.
3. Remove margin reset bracket.
4. Disconnect the clevis from the escapement trip link and loosen the plate (06-8) screw allowing the plate to move freely.
5. Move carriage to the left while holding down the tab lever bracket until right hand trucks are visible.
6. Remove the two hexagonal screws and washers which hold the universal bar to the segment.
7. Turn the universal bar and remove between the rails.
8. To install, reverse procedure. (Be sure universal bar moves freely in the segment.)
9. The following adjustments should be checked after replacing parts:
    a. Universal bar (equal tripping point left, center, right)
    b. Universal bar adjustment plate
    c. Escapement trip link
    d. Ribbon lift guide
    e. Cardholders
    f. Repositioning indicator (C4-D4)

NOTE: This procedure is based on the removal of the universal bar from a Model D4 machine. The procedure can be used on any Typebar machine with minor modifications.

174 SERVICE INFORMATION

11-5-80

Model(s): Card D

SUBJECT: FEED LINK ADJUSTMENT — CARBON RIBBON SPRING DRIVE

PURPOSE:
The proportional feed link (14-166) can interfere with proper adjustment of the feed link (APM Frame 162 — APM F/N 241-5231.)

SOLUTION: Disconnect the proportional feed link when making the feed link adjustment. Note this change in your APM and service manual.

175 SERVICE INFORMATION

2-10-82

Model(s): D

SUBJECT: SPACEBAR B/M — PART NUMBER

The part number for the standard Model D accent gray spacebar and front frame assembly (17-135) was omitted from PN/PL 241-5230-0. The correct P/N is 1190676. Add this information to your PN/PL.

166

7-18-79
(Revised) 3-26-80

SUBJECT: POWER ROLLS – DEFECTIVE

Some October and November power rolls have been found defective. Power rolls bearing the date codes 108 or 118 (Figure 1) should be returned using the appropriate parts requisition form.

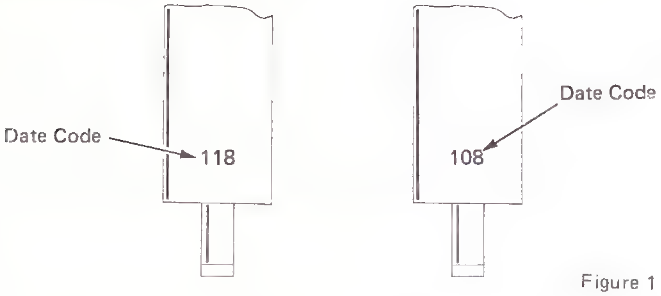


Figure 1

NOTE: Cutoff date for the return of October and November date coded power rolls is April 1, 1980. All power rolls not returned by this date shoud be scrapped.

Use Applicable Service Code

167

10-10-79

SUBJECT: RIBBON FEED SPRING – BREAKING

PURPOSE:
Some defective ribbon feed arm hubs (14-160) have been released with the hole drilled off center causing the ribbon feed spring (14-175) to break.

SYMPTOM:
Ribbon feed spring breaks within days of replacement, and cause cannot be identified.

SOLUTION:
Replace the feed arm hub and the spring.

MACHINES AFFECTED:
Between S/N: 7051988–7067920 and 8620040– 8624799.

Use Service Code 32

168

10-10-79

SUBJECT: APM ERROR

In Model C&D APM (F/N 241-5231-8), frame 130, the adjustment notes for 1/36 pitch B/S guide pin adjustment are reversed. 1/32 pitch adjustment notes ARE CORRECT. Refer to C&D Service Manual (F/N 241-5665-1) for proper wording.

Make appropriate corrections. (This item will be printed in the C&D CSI until revision of the C&D APM.)

169

3-26-80

SUBJECT: TYPEBARS – OVER PLATED

SYMPTOM:
Over-plating around the typebar fulcrum hole on field replacement typebars. The fulcrum rod does not fit through the typebar mounting hole with ease.

SOLUTION:
Check for over-plating around the hole and remove with a round file or other suitable tool.

170

3-26-80

SUBJECT: UNIVERSAL FRONT PAPER TABLE – REDESIGNED

PURPOSE:
Front paper tables (02-20) for the Model B typewriter have been redesigned. Pitch markings have been eliminated, and only one paper table is now required for each carriage length. Front paper tables are available only in flat black finish.

MECH/REF		PART NO.	DESCRIPTION	QTY.
02	20	1116322	Front Paper Table – 12″	1
		1116323	Front Paper Table – 16″	1
		1116324	Front Paper Table – 20″	1
		1116325	Front Paper Table – 24″	1
		1116326	Front Paper Table – 30″	1

PARTS INFORMATION:
Former level parts are no longer available.

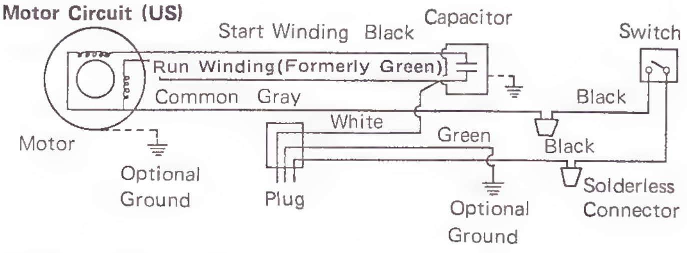
171

3-26-80

SUBJECT: SERVICE MANUAL – INCORRECT WIRING DIAGRAM

The first diagram of Figure 10, page 10 of Form No. 241-5665-1 is incorrect. The correct diagram can be found in the APM Form No. 241-5231-8, page 44, first picture, top left. Note this change in your Service Manual. The correct diagram is shown in Figure 1.

Motor Circuit (US)



Non-Double Insulated, Capacitor (S.P.S.T. Switch)

Figure 1

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172

6-4-80

SUBJECT: POWER ROLLS, DEFECTIVE – DATED 019

Some power rolls, date coded January, 1979 (019), are defective. Power rolls bearing this date that have not been installed should be returned as new defective to your BOPS or DCs using the appropriate parts requisition form.

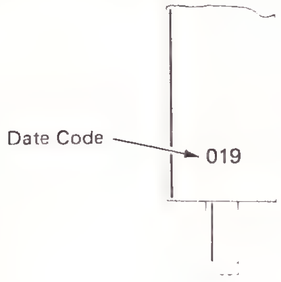


Figure 1

The cut-off date for the return of these power rolls is October 1, 1980. All power rolls not returned by this date should be scrapped.

173

11-5-80

SUBJECT: UNIVERSAL BAR – REMOVAL PROCEDURE

PURPOSE:
To provide an improved method of removing and replacing the universal bar asm.

UNIVERSAL BAR REMOVAL PROCEDURE

1. Unplug machine.
2. Remove front and rear cover, platen, deflector, right carriage end cover, reposition wire, ribbon lift guide and dust cover.
3. Remove margin reset bracket.
4. Disconnect the clevis from the escapement trip link and loosen the plate (06-8) screw allowing the plate to move freely.
5. Move carriage to the left while holding down the tab lever bracket until right hand trucks are visible.
6. Remove the two hexagonal screws and washers which hold the universal bar to the segment.
7. Turn the universal bar and remove between the rails.
8. To install, reverse procedure. (Be sure universal bar moves freely in the segment.)
9. The following adjustments should be checked after replacing parts:
   a. Universal bar (equal tripping point left, center, right)
   b. Universal bar adjustment plate
   c. Escapement trip link
   d. Ribbon lift guide
   e. Cardholders
   f. Repositioning indicator (C4-D4)

NOTE: This procedure is based on the removal of the universal bar from a Model D4 machine. The procedure can be used on any Typebar machine with minor modifications.

174

11-5-80

SUBJECT: FEED LINK ADJUSTMENT – CARBON RIBBON SPRING DRIVE

PURPOSE:
The proportional feed link (14-166) can interfere with proper adjustment of the feed link (APM Frame 162 – APM F/N 241-5231.)

SOLUTION: Disconnect the proportional feed link when making the feed link adjustment. Note this change in your APM and service manual.

175

2-10-82

SUBJECT: SPACEBAR B/M – PART NUMBER

The part number for the standard Model D accent gray spacebar and front frame assembly (17-135) was omitted from PN/PL 241-5230-0. The correct P/N is 1190676. Add this information to your PN/PL.

IBM Office Products Division Customer Engineering Memorandum

TYPEBAR

53 SERVICE INFORMATION

Mech. Code 219

7-1-70

TYPEBAR OPERATING

Keybutton Model "D" Blanket Part Numbers: Parts numbers listed on page 22, C & D Parts Catalog, F/N 241-5231-5 for individual keybuttons are incorrect and should be disregarded.

New part numbers for Model "D" keybuttons are:

ROW	ACC. GRAY	CHAR. GRAY	D. BLUE
1	1268529	1268533	1268537
2	1268530	1268534	1268538
3	1268531	1268535	1268539
4	1268532	1268536	1268540

Position 41 keybuttons have been changed to standard 2nd row keybuttons. Field orders will be supplied with the standard shaped button.

54 SERVICE INFORMATION

Mech. Code 203

7-1-70

CARRIAGE RETURN

Torque Limiter Carriage Return Tape Installation: The carriage return tape must be twisted 1/2 turn, counter-clockwise, observing from right side of the machine to clear the u-bar stud. Failure to do so will result in frayed and broken tapes.

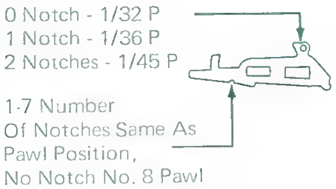
55 SERVICE INFORMATION

Mech. Code 206

7-29-70

ESCAPEMENT

Escapement Pawl Identification "Executive" Typewriter: The following illustrates the location of both pitch identification and pawl number notches.



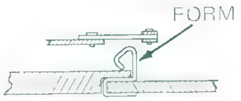
56 SERVICE INFORMATION

Mech. Code 214

7-29-70

CARBON RIBBON

Ribbon Feed Erratic-"Executive" Typewriter: A possible interference may exist on Model D "Executive" Typewriters in the area of the ribbon selector bracket. Because of a very close condition, the front LH bottom panel clip may interfere with proper ribbon feed. Check for this condition and form the clip for greater clearance.



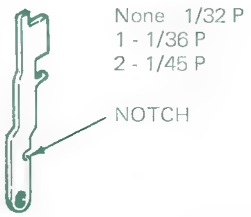
57 SERVICE INFORMATION

Mech. Code 207

7-29 70

ESCAPEMENT CONTROL

Interposer Identification Notch: The following illustrates the location of the pitch identification notch.



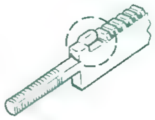
58 SERVICE INFORMATION

Mech. Code 210

7-29-70

MARGIN

Final Stop Eliminated: The final stop (Ref. 5-210) has been replaced by a swaged form on the margin rack. Also, the plating of the margin rack has been changed to zinc phosphate to facilitate manufacturing.



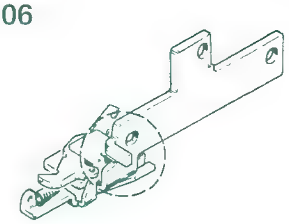
59 SERVICE INFORMATION

Mech. Code 206

7-29-70

ESCAPEMENT

Escapement Pawl Bracket–Modified: The Model "D" Standard escapement pawl bracket has been modified in order to eliminate a roll-pin from the rear rail. Replacement of an old-style pawl bracket will necessitate removing the roll-pin from the rear rail.



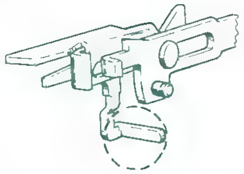
60 SERVICE INFORMATION

Mech. Code 218

7-29-70

TAB

Tab Lever–Modified: The lower tab lever extension has been modified, as illustrated, to eliminate the nylon stop on the rear rail (Ref. 63-218). Installation of the new lever on machines prior to this change will necessitate removing the nylon stop.



61 ENGINEERING CHANGE

Mech. Code 216

7-29-70

SUBJECT: Segment Guide Spring Breakage

PURPOSE: To authorize Code 32 for replacement of broken segment guide springs.

NOTE: When both lower guide springs are broken, use a file to smooth the edge of the segment support where the springs are mounted.

MACHINES AFFECTED: Model "D" Standard Typewriter between S/N 6280312 and 6418605.
Model "D" "Executive" Typewriters between S/N 8358999 and 8407540.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.
CHANGE TYPE: Reliability ● CODE 32 ● EXPIRES: 7/30/71

62 ENGINEERING CHANGE

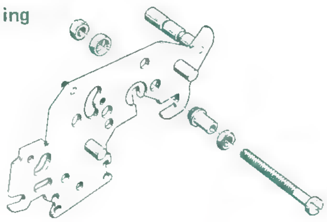
Mech. Code 202

7-29-70

SUBJECT: Paper Release Lever Bushing

SYMPTOM: The paper release lever bushing may break.

SOLUTION: Order B/M 1275826 which contains a replacement bushing, 2 nuts, a backup plate and screw. The bushing can be inserted into the end plate by tightening both nuts as illustrated.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
367	1275826	B/M, Bushing Replacement	.85

MACHINES AFFECTED: Model D Standard between S/N 6435785 & 6470897, Model D "Executive" between S/N 8409829 & 8423934.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.
CHANGE TYPE: Reliability ● CODE: 32 ● EXPIRES: 8/1/71

63 SERVICE INFORMATION

Mech. Code 207

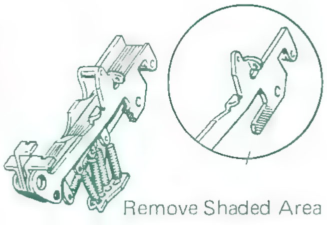
8-7-70

INTERPOSER CAGE ASSEMBLY–BINDS

Previously published in ATB 168.

To eliminate binds, break off the lug on the right rear of the interposer side frame where it engages the trip lever stud. The lug may be broken off in the Field by using the t-bender from the bottom of the machine. This lug is brittle and breaks easily. "Executive" Typewriters above S/N 8416360 will have this lug removed.

NOTE: Remove only the right rear lug as shown.



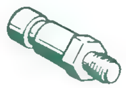
IBM, "Executive", "Hextowriter", "IBM EXECUTARY", and "Selectric" are registered trademarks of the International Business Machines Corp.

64 ENGINEERING CHANGE

Mech. Code 207

8-7-70

SUBJECT: Selector Bail Mounting Plate Stud--Redesigned



PURPOSE: To facilitate assembly. The selector bail mounting plate stud now incorporates a 6-40 thread. The mounting holes in both side frames have been tapped to accept the new stud. Standard and "Executive" Typewriters now use the same side frames.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
75	1190780	Stud, Selector Bail	.15

NOTE: For "Executive" Typewriters above approximate S/N 8410710.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

CHANGE TYPE: Manufacturing ● Use applicable service code.

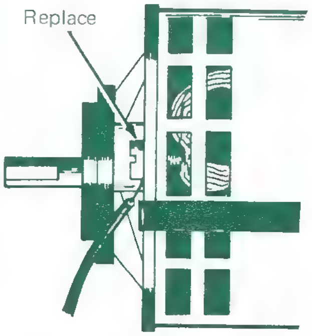
65 SAFETY

Mech. Code 211

8-26-70

SUBJECT: Motor Ground Wire–3-Wire Model D–Possible Electrical Safety Hazard

Previously published in CEM 198 (9-10-69).



SAFETY LOCATION: There is a potential safety hazard with the motor ground wire screw. A longer screw was substituted during manufacture and must be replaced. Some motors may have been installed so that the tip of the screw can contact the motor winding.

SAFETY CORRECTIVE ACTION: Replace the motor ground wire screw (Ref. 132, Mech. 211) with front frame screw, P/N 1090680 on the next service call or inspection.

NOTE: The motor can easily be removed from the bottom of the machine by first disconnecting the ground wire from the side frame.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION
3	1090680	Screw

MACHINES AFFECTED: Model D's with 3-wire cords between S/N 6301868 to 6344240 Standard and 8367509 to 8382891 "Executive" Typewriters.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

CHANGE TYPE: Safety ● CODE: 32

66 ENGINEERING CHANGE

Mech. Code 202

9-23-70

SUBJECT: Repositioning Bellcrank – Eliminated

PURPOSE: To reduce parts and simplify the mechanism, a single link has replaced the repositioning bellcrank, P/N 1171020, its mounting stud, and the upper and lower links.

ADJUSTMENTS: Adjust link so the flipper button is parallel to the base of the machine.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
358	1231105	Link Connecting	.55
367	1231092	Bracket Stop	.15
368	0110956	Spring Restoring	.04

MACHINES AFFECTED: "Executive" Typewriters above S/N 8411330 have this change plant installed.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Use applicable service code.

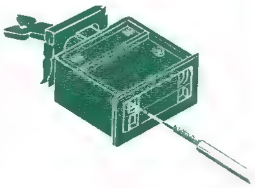
PARTS INFORMATION: Order Lexington. Former-style parts remain available.

67 SAFETY

Mech. Code 211

9-23-70

SUBJECT: "Quick-Wire" Switches – Loose Wires



SAFETY LOCATION: Off/On Switch. Many switches used on late model "Selectric" and Typebar Typewriters, and other OP equipment, incorporate the "Quick-Wire" connection feature.

SAFETY PRECAUTIONS: When experiencing electrical or switch problems the possibility exists that the wires are not being held firmly in place by this "Quick-Wire" feature.

CAUTION: Before checking this connection, remove power by unplugging the machine. Pull on each of the 4 wires — they should remain firmly locked in the switch. If any of the four wires are not held firmly, the switch should be replaced.

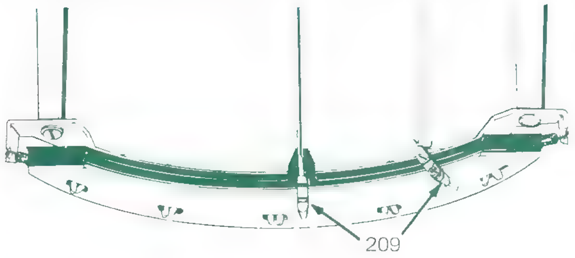
NOTE: The remaining wires can be removed by inserting a small "Bristo" wrench (or similar tool) into the switch beside the individual wires.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Safety ● CODE: 32

CEM No. 68 (Cont'd)

364	1190689	Auxiliary Keylever, Repeat	1	1.45
365	1190688	Auxiliary Keylever, Non-Repeat	1	1.45
366	1190683	Keylever, Pos. 23	1	1.25
367	1190684	Keylever, Pos. 39 First Row	1	1.25
367	1190685	Keylever, Pos. 41 Second Row	1	1.25
367	1190686	Keylever, Pos. 42 Third Row	1	1.25
367	1190687	Keylever, Pos. 40 Fourth Row	1	1.25



TYPEBAR Ref. No. 209

TYPE STYLE	POS. 23 (_/—)	Pos. 39 (&/7)
Prestige Elite (SE)	1275930	1275878
Prestige Pica (SP)	1275931	1275879
Courier (SM)	1275934	1275881
Elite (E)	1275903	1275851
Elite Gothic SC (GE)	1275903	1275853
Elite Gothic DC (F)	1275905	1275853
Large Elite (LE)	1275915	1275863
Pica (P)	1275902	1275850
Pica Gothic SC (G)	1275904	1275852
Pica Gothic DC (H)	1275904	1275852
Bookface Academic (BA)	1275911	1275859
Dual Basic (DB)	1275916	1275864
Diplomat (B2)	1275924	1275864
Arcadia (JM)	1275951	1275894
Heritage (PJ)	1275947	1275894
Modern (PM)	1275939	1275886
Documentary (PE)	1275940	1275887
Secretarial (PS)	1275940	1275885
Bold Face No. 1 (PO)	1275937	1275884
Mid Century (PF)	1275943	1275890
Bold Face No. 2 (PB)	1275945	1275892
Artisan 12 (G2)	1275932	1275880
Manifold 10 SC (H3)	1275927	1275875

To obtain a Typebar configuration which has not been listed, order from Type Available Catalog using special type order form and blanket typebar P/N 1268329.

NOTE: The typebar rest pad, P/N 1116773, and rest pad frame, P/N 1115140, have been modified to incorporate a cantilever finger for stabilizing the position 23 underscore. The new style modified typebar rest pad assembly is compatible with all Model C and D typewriters. However, the old style rest pad is not to be used on center underscore machines. Field conversion of former level machines to center underscore is not feasible at this time.

MACHINES AFFECTED: Model D's above approximate S/N 6498584 Standard and S/N 8432881 "Executive". Decimal tab machines are not affected by this change.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● Use applicable service code.

PARTS INFORMATION: Order Lexington.

69 SERVICE INFORMATION

10-21-70

PUBLICATIONS — MODEL A & B — REVISED

As of September 2, 1970, the following Model A & B publications have been released to the Field.

FORM NO.	NAME	CUST. PRICE
241-5232-1	Parts Catalog	.70
241-5233-0	Part No./Price List	.65

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IBM Office Products Division **Customer Engineering Memorandum**

TYPEBAR

53 SERVICE INFORMATION

Mech. Code 219 7-1-70

TYPEBAR OPERATING

Keybutton Model "D" Blanket Part Numbers: Parts numbers listed on page 22, C & D Parts Catalog, F/N 241-5231-5 for individual keybuttons are incorrect and should be disregarded.

New part numbers for Model "D" keybuttons are:

ROW	ACC. GRAY	CHAR. GRAY	D. BLUE
1	1268529	1268533	1268537
2	1268530	1268534	1268538
3	1268531	1268535	1268539
4	1268532	1268536	1268540

Position 41 keybuttons have been changed to standard 2nd row keybuttons. Field orders will be supplied with the standard shaped button.

54 SERVICE INFORMATION

Mech. Code 203 7-1-70

CARRIAGE RETURN

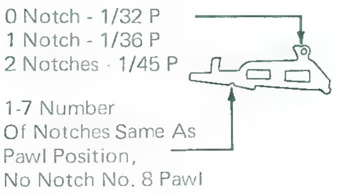
Torque Limiter Carriage Return Tape Installation: The carriage return tape must be twisted 1/2 turn, counter-clockwise, observing from right side of the machine to clear the u-bar stud. Failure to do so will result in frayed and broken tapes.

55 SERVICE INFORMATION

Mech. Code 206 7-29-70

ESCAPEMENT

Escapement Pawl Identification "Executive" Typewriter: The following illustrates the location of both pitch identification and pawl number notches.

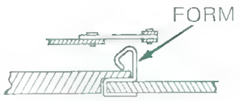


56 SERVICE INFORMATION

Mech. Code 214 7-29-70

CARBON RIBBON

Ribbon Feed Erratic-"Executive" Typewriter: A possible interference may exist on Model D "Executive" Typewriters in the area of the ribbon selector bracket. Because of a very close condition, the front LH bottom panel clip may interfere with proper ribbon feed. Check for this condition and form the clip for greater clearance.

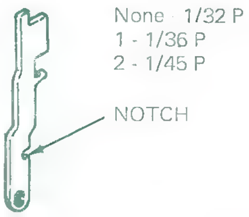


57 SERVICE INFORMATION

Mech. Code 207 7-29-70

ESCAPEMENT CONTROL

Interposer Identification Notch: The following illustrates the location of the pitch identification notch.

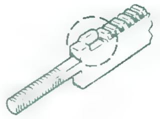


58 SERVICE INFORMATION

Mech. Code 210 7-29-70

MARGIN

Final Stop Eliminated: The final stop (Ref. 5-210) has been replaced by a swaged form on the margin rack. Also, the plating of the margin rack has been changed to zinc phosphate to facilitate manufacturing.

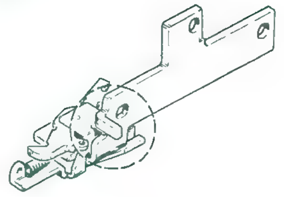


59 SERVICE INFORMATION

Mech. Code 206 7-29-70

ESCAPEMENT

Escapement Pawl Bracket—Modified: The Model "D" Standard escapement pawl bracket has been modified in order to eliminate a roll-pin from the rear rail. Replacement of an old-style pawl bracket will necessitate removing the roll-pin from the rear rail.

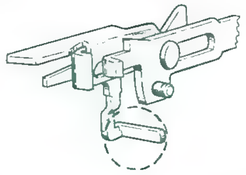


60 SERVICE INFORMATION

Mech. Code 218 7-29-70

TAB

Tab Lever—Modified: The lower tab lever extension has been modified, as illustrated, to eliminate the nylon stop on the rear rail (Ref. 63-218). Installation of the new lever on machines prior to this change will necessitate removing the nylon stop.



61 ENGINEERING CHANGE

Mech. Code 216 7-29-70

SUBJECT: Segment Guide Spring Breakage

PURPOSE: To authorize Code 32 for replacement of broken segment guide springs.

NOTE: When both lower guide springs are broken, use a file to smooth the edge of the segment support where the springs are mounted.

MACHINES AFFECTED: Model "D" Standard Typewriter between S/N 6280312 and 6418605.
Model "D" "Executive" Typewriters between S/N 8358999 and 8407540.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● CODE 32 ● EXPIRES: 7/30/71

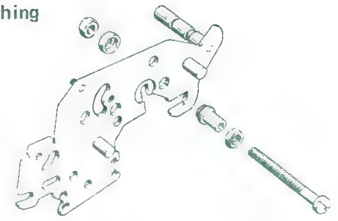
62 ENGINEERING CHANGE

Mech. Code 202 7-29-70

SUBJECT: Paper Release Lever Bushing

SYMPTOM: The paper release lever bushing may break.

SOLUTION: Order B/M 1275826 which contains a replacement bushing, 2 nuts, a backup plate and screw. The bushing can be inserted into the end plate by tightening both nuts as illustrated.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
367	1275826	B/M, Bushing Replacement	.85

MACHINES AFFECTED: Model D Standard between S/N 6435785 & 6470897, Model D "Executive" between S/N 8409829 & 8423934.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● CODE: 32 ● EXPIRES: 8/1/71

63 SERVICE INFORMATION

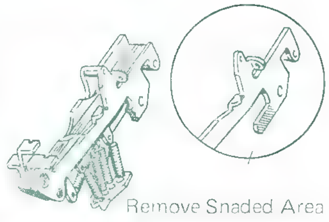
Mech. Code 207 8-7-70

INTERPOSER CAGE ASSEMBLY—BINDS

Previously published in ATB 168.

To eliminate binds, break off the lug on the right rear of the interposer side frame where it engages the trip lever stud. The lug may be broken off in the Field by using the t-bender from the bottom of the machine. This lug is brittle and breaks easily. "Executive" Typewriters above S/N 8416360 will have this lug removed.

NOTE: Remove only the right rear lug as shown.



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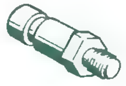
64 ENGINEERING CHANGE

Mech. Code 207

8-7-70

SUBJECT: Selector Bail Mounting Plate Stud—Redesigned



PURPOSE: To facilitate assembly. The selector bail mounting plate stud now incorporates a 6-40 thread. The mounting holes in both side frames have been tapped to accept the new stud. Standard and "Executive" Typewriters now use the same side frames.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
75	1190780	Stud, Selector Bail	.15

NOTE: For "Executive" Typewriters above approximate S/N 8410710.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

CHANGE TYPE: Manufacturing ● Use applicable service code.

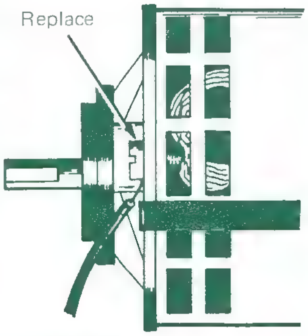
65 SAFETY

Mech. Code 211

8-26-70

SUBJECT: Motor Ground Wire—3-Wire Model D—Possible Electrical Safety Hazard

Previously published in CEM 198 (9-10-69).



SAFETY LOCATION: There is a potential safety hazard with the motor ground wire screw. A longer screw was substituted during manufacture and must be replaced. Some motors may have been installed so that the tip of the screw can contact the motor winding.

SAFETY CORRECTIVE ACTION: Replace the motor ground wire screw (Ref. 132, Mech. 211) with front frame screw, P/N 1090680 on the next service call or inspection.

NOTE: The motor can easily be removed from the bottom of the machine by first disconnecting the ground wire from the side frame.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION
3	1090680	Screw

MACHINES AFFECTED: Model D's with 3-wire cords between S/N 6301868 to 6344240 Standard and 8367509 to 8382891 "Executive" Typewriters.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

CHANGE TYPE: Safety ● CODE: 32

66 ENGINEERING CHANGE

Mech. Code 202

9-23-70

SUBJECT: Repositioning Bellcrank — Eliminated

PURPOSE: To reduce parts and simplify the mechanism, a single link has replaced the repositioning bellcrank, P/N 1171020, its mounting stud, and the upper and lower links.

ADJUSTMENTS: Adjust link so the flipper button is parallel to the base of the machine.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
358	1231105	Link Connecting	.55
367	1231092	Bracket Stop	.15
368	0110956	Spring Restoring	.04

MACHINES AFFECTED: "Executive" Typewriters above S/N 8411330 have this change plant installed.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Use applicable service code.

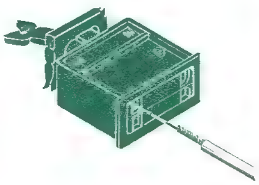
PARTS INFORMATION: Order Lexington. Former-style parts remain available.

67 SAFETY

Mech. Code 211

9-23-70

SUBJECT: "Quick-Wire" Switches — Loose Wires



SAFETY LOCATION: Off/On Switch. Many switches used on late model "Selectric" and Typebar Typewriters, and other OP equipment, incorporate the "Quick-Wire" connection feature.

SAFETY PRECAUTIONS: When experiencing electrical or switch problems the possibility exists that the wires are not being held firmly in place by this "Quick-Wire" feature.

CAUTION: Before checking this connection, remove power by unplugging the machine. Pull on each of the 4 wires — they should remain firmly locked in the switch. If any of the four wires are not held firmly, the switch should be replaced.

NOTE: The remaining wires can be removed by inserting a small "Bristo" wrench (or similar tool) into the switch beside the individual wires.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Safety ● CODE: 32

68 ENGINEERING CHANGE

Mech. Code 219

10-21-70

SUBJECT: Center — Underscore — Position 23

PURPOSE: To provide a more reliable underscore. The basket location of the underscore has been relocated to position 23. By utilizing cross-over bails, the keyboard remains unchanged.

ADJUSTMENTS:

Individual Keylever Trip Adjustment: Insert the blade of a screwdriver into the rectangular shaped slot at the top of the auxiliary keylever and rotate the blade. Front to rear rotation decreases clearance; rear to front rotation increases clearance. The position 23 auxiliary keylever should be adjusted to trip the cam for a single operation just as the nylon repeat guide touches the front guide comb.

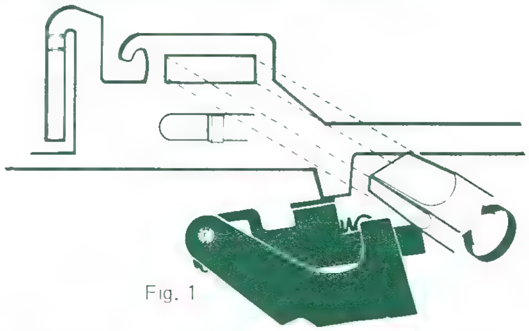


Fig. 1

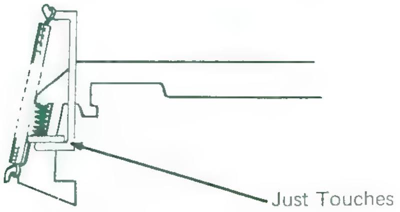


Fig. 2

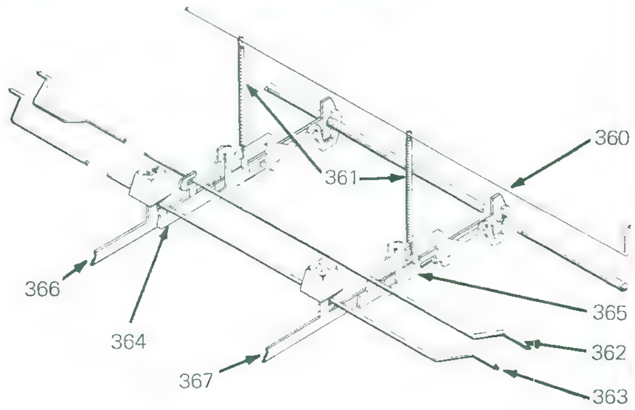
Lubrication Specifications:

IBM No. 10 Oil

1. Cross-over bails at the side frame pivot points.

IBM No. 23 Grease

1. Primary keylever cross-over bail hooks.
2. Auxiliary keylever cross-over bail hooks.

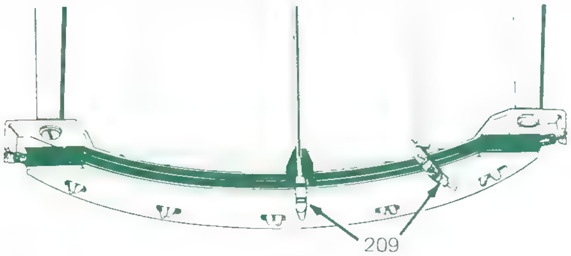


PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	QTY.	PRICE
360	1190693	Spring Support, Std. & "Exec."	1	.15
360	1190692	Spring Support Dual Ribbon	1	.75
361	1071691	Spring, Std. & "Exec."	2	.05
361	1071687	Spring, Dual Ribbon	2	.05
362	1190690	Rear Bail, Non-Repeat	1	.30
363	1190691	Front Bail, Repeat	1	.25

CEM No. 68 (Cont'd)

364	1190689	Auxiliary Keylever, Repeat	1	1.45
365	1190688	Auxiliary Keylever, Non-Repeat	1	1.45
366	1190683	Keylever, Pos. 23	1	1.25
367	1190684	Keylever, Pos. 39 First Row	1	1.25
367	1190685	Keylever, Pos. 41 Second Row	1	1.25
367	1190686	Keylever, Pos. 42 Third Row	1	1.25
367	1190687	Keylever, Pos. 40 Fourth Row	1	1.25



TYPEBAR Ref. No. 209

TYPE STYLE	POS. 23 (_/—)	Pos. 39 (&/7)
Prestige Elite (SE)	1275930	1275878
Prestige Pica (SP)	1275931	1275879
Courier (SM)	1275934	1275881
Elite (E)	1275903	1275851
Elite Gothic SC (GE)	1275903	1275853
Elite Gothic DC (F)	1275905	1275853
Large Elite (LE)	1275915	1275863
Pica (P)	1275902	1275850
Pica Gothic SC (G)	1275904	1275852
Pica Gothic DC (H)	1275904	1275852
Bookface Academic (BA)	1275911	1275859
Dual Basic (DB)	1275916	1275864
Diplomat (B2)	1275924	1275864
Arcadia (JM)	1275951	1275894
Heritage (PJ)	1275947	1275894
Modern (PM)	1275939	1275886
Documentary (PE)	1275940	1275887
Secretarial (PS)	1275940	1275885
Bold Face No. 1 (PO)	1275937	1275884
Mid Century (PF)	1275943	1275890
Bold Face No. 2 (PB)	1275945	1275892
Artisan 12 (G2)	1275932	1275880
Manifold 10 SC (H3)	1275927	1275875

To obtain a Typebar configuration which has not been listed, order from Type Available Catalog using special type order form and blanket typebar P/N 1268329.

NOTE: The typebar rest pad, P/N 1116773, and rest pad frame, P/N 1115140, have been modified to incorporate a cantilever finger for stabilizing the position 23 underscore. The new style modified typebar rest pad assembly is compatible with all Model C and D typewriters. However, the old style rest pad is not to be used on center underscore machines. Field conversion of former level machines to center underscore is not feasible at this time.

MACHINES AFFECTED: Model D's above approximate S/N 6498584 Standard and S/N 8432881 "Executive". Decimal tab machines are not affected by this change.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● Use applicable service code.

PARTS INFORMATION: Order Lexington.

69 SERVICE INFORMATION

10-21-70

PUBLICATIONS – MODEL A & B – REVISED

As of September 2, 1970, the following Model A & B publications have been released to the Field.

FORM NO.	NAME	CUST. PRICE
241-5232-1	Parts Catalog	.70
241-5233-0	Part No./Price List	.65

70 ENGINEERING CHANGE

Mech. Code 204

11-4-70

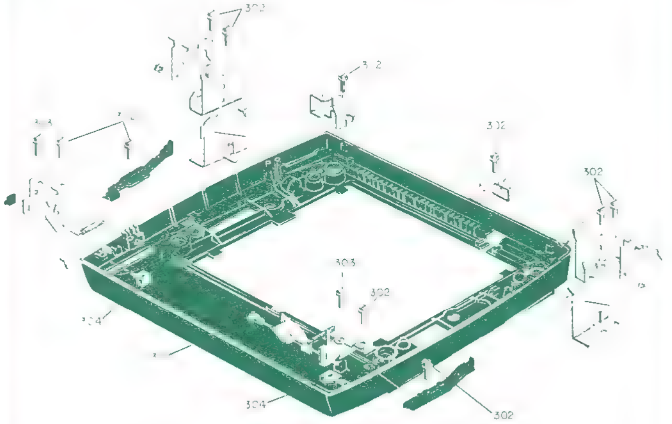
SUBJECT: Model D Standard Bottom Cover – Material Change

PURPOSE: To facilitate manufacturing. The raven black bottom cover is now manufactured from Polyvinyl chloride.

ADJUSTMENTS:

1. Remove the keyplate mounting brackets.
2. Loosen the top cover hinge arm screws, the front latch screws, the hinge arm bracket screws and the rear cover latch bracket screws.
3. With the front cover latched, adjust the front latches (front to rear) to obtain the desired overlap of the top cover with the lip on the bottom cover.
4. Adjust the top cover hinge arms for a proper cover fit at the hinge arm bracket. Avoid an interference fit.
5. Adjust the hinge arm brackets. Position the brackets toward the rear of the machine until contact is just made between the round stud on the bracket and the rear portion of the hinge arm.
6. With the rear cover installed, adjust the rear cover bracket to obtain a .025" gap between the rear cover and the top cover. This adjustment is accomplished by inserting a screwdriver through the slot provided in the bottom of the vinyl tub.

NOTE: The preceding adjustments should provide you with a good cover fit. However, refinement of individual adjustments might be necessary to obtain a more desirable fit. Individual adjustments can be made without repeating the entire procedure.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	QTY.	PRICE
301	1231050	Vinyl Bottom Cover Raven Black	1	14.00
302	1164577	Screw	10	.01
303	1132669	Screw	2	.04
304	1231037	Clip	2	.06

NOTE: Parts illustrated that are not referenced can be ordered from the Parts Catalog.

MACHINES AFFECTED: Standard Typewriters above approximate S/N 6492578.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Use applicable service code.

PARTS INFORMATION: Former-level die-cast bottom covers remain available. Converting to the new vinyl bottom cover from a former-level will necessitate ordering a complete set of bottom cover hardware from Lexington.

71 ENGINEERING CHANGE

Mech. Code 206

11-4-70

SUBJECT: Escapement Pawl Block Assembly – "Executive" Typewriter – Redesigned

PURPOSE: To simplify the pawl release and grouping mechanism. This change reduces the number of parts, improves serviceability, and increases reliability.

Removal and replacement procedure:

1. Remove the rear cover and the tab set and clear bracket assembly.
2. Disconnect the pawl aligning link, carriage return pawl release link, clutch unlatching link, automatic grouping link, and aligning lever restoring spring.
3. Remove the tab lever mounting stud, but do not remove the tab lever.
4. Remove the margin control bellcrank.

IBM, "Executive", "Hektowriter", "IBM EXECUTARY", and "Selectric" are registered trademarks of the International Business Machines Corp

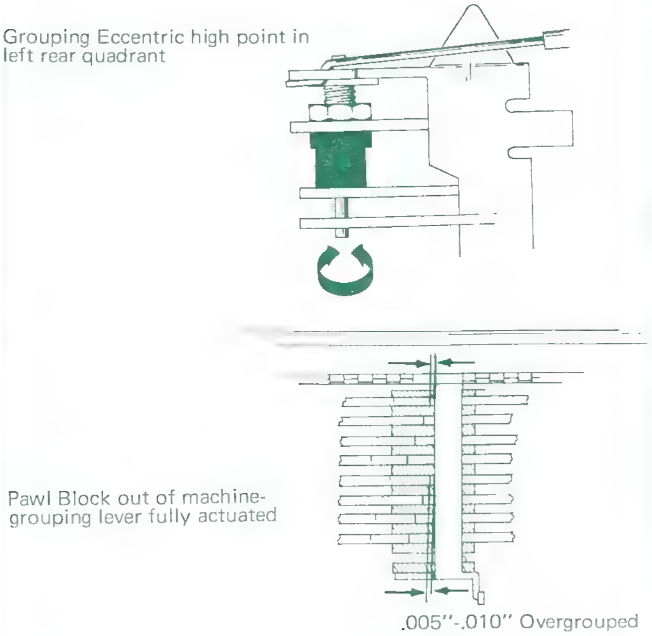
5. Block the carriage and remove the pawl block mounting screws.
6. Remove the escapement pawl block assembly from the rear of the machine.

To replace the assembly, reverse the above procedure.

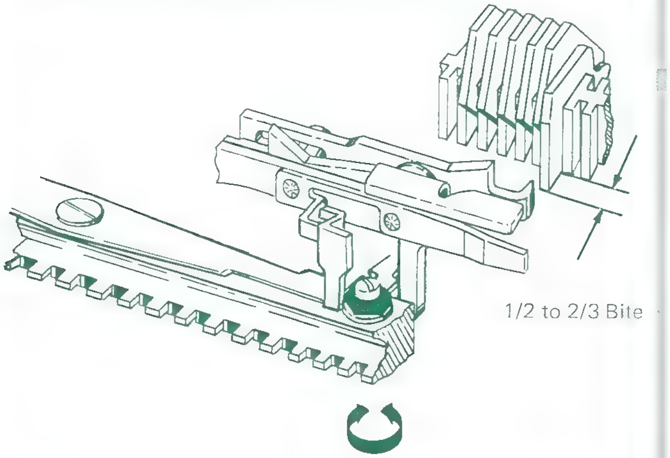
Service Hint, Pawl Spring Replacement: Remove the intermediate release and grouping lever by removing the two c-clips and mounting pin. The spring bracket and spring holes in the pawls are then easily accessible.

ADJUSTMENTS:

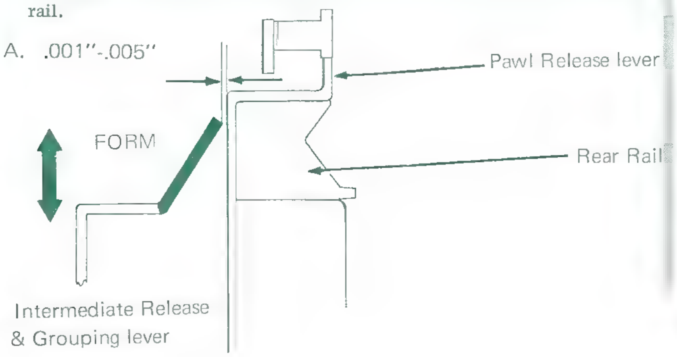
1. Release and Grouping Lever Eccentric — preliminary (use only when the pawl block is out of machine) — Adjust the eccentric for .005" to .010" overgrouping with the release and grouping lever fully actuated. Keep the highpoint in the rear left hand quadrant.


Grouping Eccentric high point in left rear quadrant
Pawl Block out of machine-grouping lever fully actuated
.005"-.010" Overgrouped

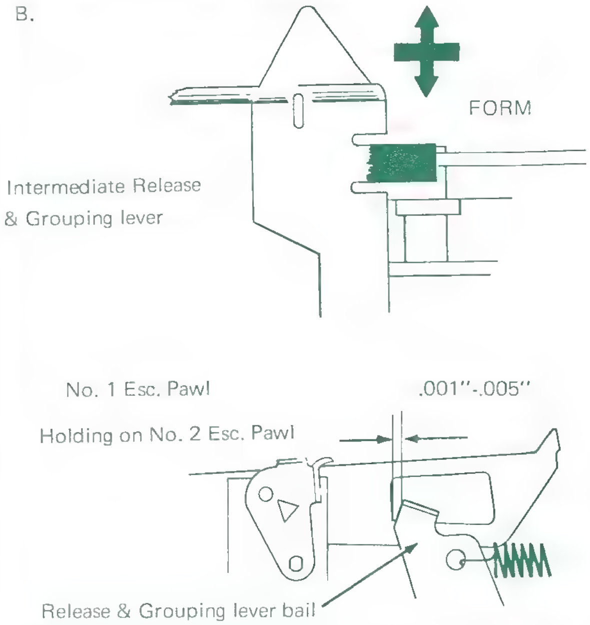
2. Tab Latch Eccentric — Adjust the eccentric for 1/2 to 2/3 overlap of a set tab stop by the check lever when the tab lever is latched out. Keep the eccentric in the right half of its orbit.



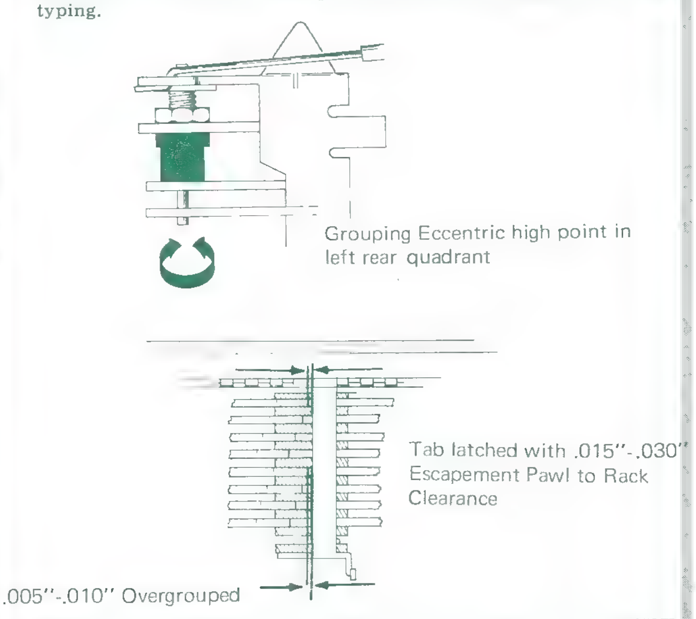
3. Release and Grouping Lever Rest Position —
(a) Form the angular tip on the intermediate pawl release lever for .001" to .005" between the angular tip and the pawl release lever extension. **Note:** Be sure that the extension is resting against the rail.



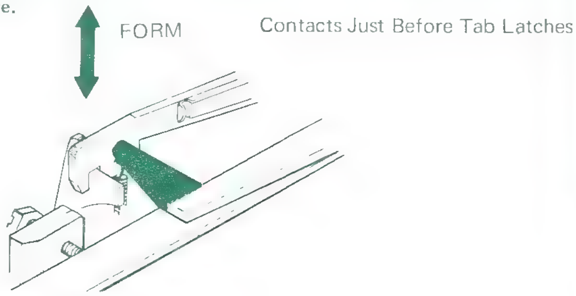
(b) Form the lug on the intermediate pawl release and grouping lever for .001" to .005" clearance between the left side of the No. 1 pawl grouping window and the bail of the pawl release and grouping lever, while holding on the No. 2 pawl. This clearance may be observed from the bottom of the machine. **Caution:** Disconnect all links before making this adjustment.


B.
FORM
Intermediate Release & Grouping lever
No. 1 Esc. Pawl
.001"-.005"
Holding on No. 2 Esc. Pawl
Release & Grouping lever bail

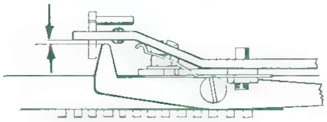
4. Release and Grouping Lever Eccentric — With all links still disconnected, adjust the eccentric so that full grouping occurs just before the pawl tips reach the top of the escapement rack teeth. This adjustment can be observed by operating the pawl release and grouping lever by hand. With .015" to .030" pawl to rack clearance, the pawls should be overgrouped by .005" to .010". Observe that there is no movement of the pawl release and grouping lever when typing.


Grouping Eccentric high point in left rear quadrant
Tab latched with .015"-.030" Escapement Pawl to Rack Clearance
.005"-.010" Overgrouped

5. Pawl Release Lever — Form the ear on the left end of the pawl release lever so the left end of the tab lever contacts it just before the tab latches. **Caution:** With the tab cam on its high point, the release and grouping lever **must have** some remaining motion. If the release and grouping lever contacts the pawl block before the high point, the upright bail may be damaged. At rest, there should also be clearance between the left end of the tab lever and the pawl release lever. This ensures that the pawl release lever can fully restore.



Clearance at Rest



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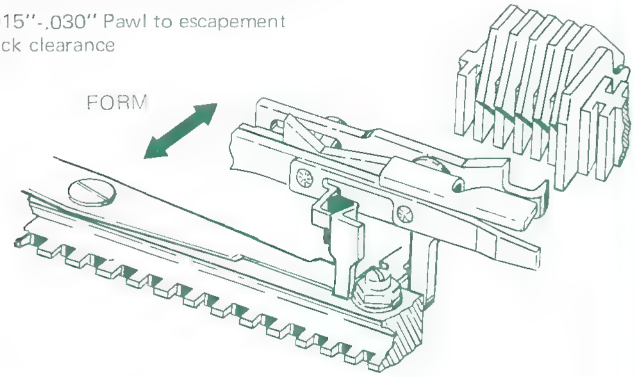
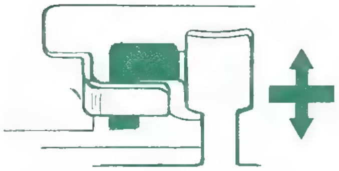
6. Pawl Clearance — With the tab lever latched, form the upright lug on the pawl release lever so the escapement pawls clear the escapement rack by .015" to .030".

.015"-.030" Pawl to escapement rack clearance





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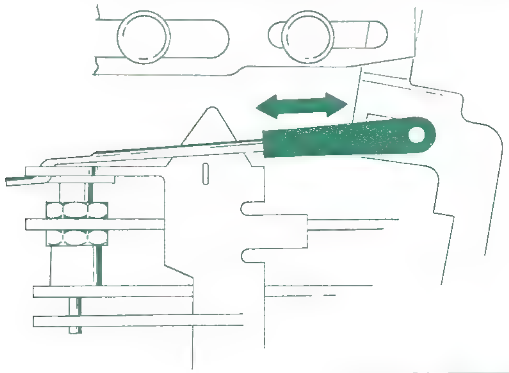
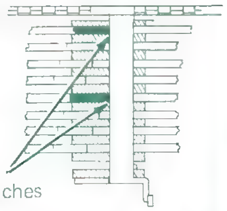
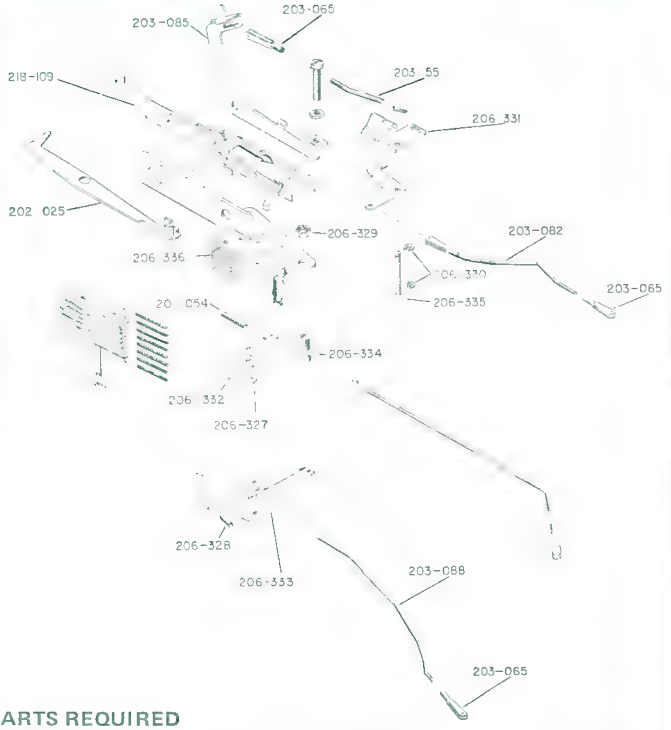
7. Automatic Grouping Link — With the carriage in full overbank, adjust the automatic grouping link clevis to raise the pawls .010" to .035" off the bottom of the escapement rack (fully grouped).





Note: Use the left hand margin, not the side frame, when making this adjustment.

Adjustments for carriage return, tab, backspace, and manual carriage release remain the same.



PARTS REQUIRED

MECH.	REF.	PART NO.	DESCRIPTION	PRICE
202	025	1231153	Lever, Pawl Release	*
203	082	1231159	Link, Clutch Unlatch	*
203	085	1231155	Bellcrank, Margin Control	*
203	088	1231157	Link Pawl Release	*
203	155	1231158	Link, Auto Grouping	*
206	325	1231163	Pawl Block Asm., 1/32P, "Simplified"	*
206	325	1231164	Pawl Block Asm, 1/36P, "Simplifier"	*
206	326	1275650	F.I. B/M, 1/32P	*
206	326	1275651	F.I. B/M, 1/36P	*

Note: F.I. B/M's contain all necessary parts, including esc. pawl block asm., to convert to "simplified" escapement on "C" & "D" "Executive" Typewriters.

MECH.	REF.	PART NO.	DESCRIPTION	PRICE
206	327	0264641	Retainer, Pawl Align Lever	*
206	328	1071687	Spring, Group Lever Arm	*
206	329	1090550	Nut, Grouping Lever	*
206	330	2175670	Retainer	*
206	331	1231136	Lever, Intermediate Pawl Release	*
206	332	1231138	Lever, Pawl Aligning	*
206	333	1231143	Lever, Pawl Release And Grouping	*
206	334	1231145	Eccentric, Grouping Lever	*
206	335	1231146	Pin, Grouping Lever	*
206	336	1231151	Block, Escapement	*
218	109	1231154	Tab Lever Asm.	*

*Prices not available at time of printing.

MACHINES AFFECTED: Above S/N 8434611 have this change.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

RECORDS: Note this CEM in the picture section of Parts Catalog (page 14) under "Executive" Typewriter Escapement, (Mech. 206).

CHANGE TYPE: Reliability ● Use applicable service code.

PARTS INFORMATION: Order Lexington. Former-level parts remain available.

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IBM Office Products Division
Customer Engineering Memorandum
TYPEBAR

The information contained in the CEM's that have not been republished (i.e. — missing CEM's in the numerical sequence) is in the latest Typebar Typewriter Parts Catalog, or Pictorial Reference/Adjustment Manual.

38 ENGINEERING CHANGE

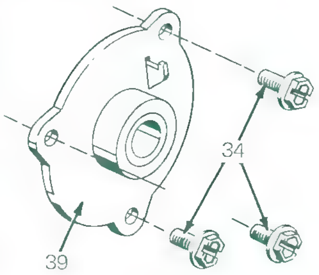
Mech. Code **211** 1-21-70 (Revised) 7-1-70

SUBJECT: New-style LH Power Roll Bearing

PURPOSE: To facilitate manufacturing.

PARTS REQUIRED:

REF.	PART NO.	QTY.	DESCRIPTION	PRICE
34	1190700	3	Screw, Power Roll	.02
39*	1190702	1	Bearing, Power Roll LH	.65



NOTE: The new-style bearing replaces the old bearing, P/N 1078501, for Models A, B, C & D. On all machines prior to this change, installing the new bearing will necessitate ordering three of P/N 1079999, new-style screw.

MACHINES AFFECTED: Model D's above approximate S/N 6375891 Standard and S/N 8393924 "Executive" Typewriter have this change plant installed.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE OF CHANGE: Manufacturing Improvement ● Use applicable Service Code

PARTS INFORMATION: Use old level parts first.

39 ENGINEERING CHANGE

Mech. Code **205 218** 12-10-69 (Revised) 7-1-70

SUBJECT: Redesigned Model D "Executive" Tab Decelerator Cam

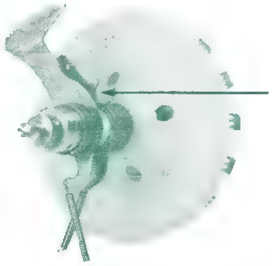
Previously published in CEM 39 dated 12/10/69

PURPOSE: To facilitate manufacturing.

PARTS REQUIRED

MECH.	REF.	PART NO.	DESCRIPTION	PRICE
205	20	1190821	Cam Arm Assembly, Tab, Short Mainspring, "Executive" Typewriter	.55
205	45	1190712	Decelerator Assembly, Short Mainspring for 13" & 17" "Executive" Typewriters Above S/N 8389567	17.85
218	32	1190533	Link, Tab Decelerator Bellcrank For 13" & 17" "Executive" Typewriters Above S/N 8389567	.10

MACHINES AFFECTED: Above S/N 8389567 have this change plant installed.



NOTE: Redesigned tab decelerator cam allows the use of the short mainspring used on current-production 13" and 17" Standard machines to be used on 13" and 17" "Executive" Typewriters

New-level and old-level parts are not interchangeable.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE OF CHANGE: Manufacturing Improvement ● Use applicable Service Code

PARTS INFORMATION: Former-level parts remain available.

45 ENGINEERING CHANGE

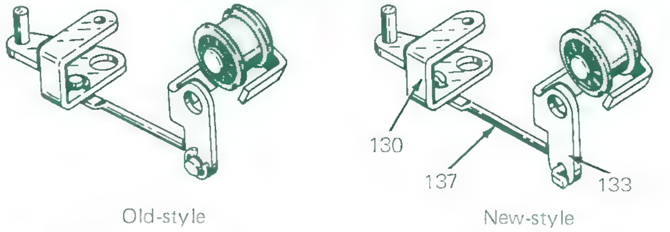
Mech. Code **203** 2-25-70 (Revised) 7-1-70

SUBJECT. New-Style Torque Limiter Link, Pulley Assembly And Intermediate Bellcrank

PURPOSE: To facilitate manufacturing

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
137	1191112	Link, Bellcrank Connecting	.20
130	1191114	Bellcrank, Intermediate	.30
133	1191116	Idler Bellcrank & Pulley Asm.	.55



Old-style New-style

MACHINES AFFECTED: Model D's above approximate S/N 6413975 Standard and S/N 8406310 "Executive" Typewriters have this change plant installed.

NOTE: New and old-level are not interchangeable.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE OF CHANGE: Manufacturing Improvement ● Use applicable Service Code

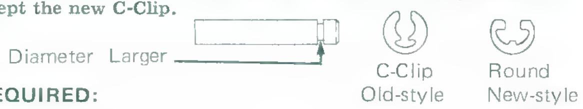
PARTS INFORMATION: Former level parts remain available.

46 ENGINEERING CHANGE

Mech. Code **206** 5-20-70 (Revised) 7-1-70

SUBJECT: "Executive" Escapement Pawl Pin C-Clip

PURPOSE: C-Clip, P/N 2175670 is now being used in place of C-Clip, P/N 147297. Escapement pawl pin P/N 1074057 has a larger diameter slot to accept the new C-Clip.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
43	2175670	C-Clip — Above S/N 8404618	.04
43	147297	Horse Shoe Clip — Below S/N 8404618	.04
44	1074057	Escapement Pawl Pin	.25

MACHINES AFFECTED: "Executive" Typewriters above S/N 8404618.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

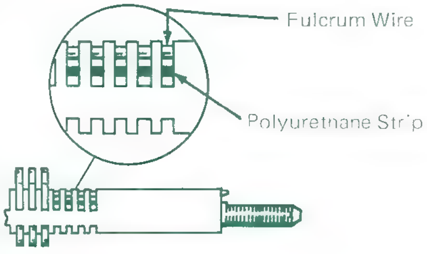
TYPE OF CHANGE: Manufacturing Improvement ● Use Applicable Service Code

PARTS INFORMATION: Former level parts remain available.

47 ENGINEERING CHANGE

Mech. Code **218** 5-6-70 (Revised) 7-1-70

SUBJECT: Tab Rack Springs Eliminated From Model C & D Tab Racks



PURPOSE: The tab stop springs have been eliminated from the 13 and 17 inch tab racks including Decimal Tab. In place of the springs, a polyurethane strip has been installed within the rack's groove to hold the stops in a detented position.

The tab stops have not been changed and may still be replaced by removing the fulcrum wire.

ADJUSTMENTS: Remain the same.

PARTS REQUIRED: Part numbers remain the same.

MACHINES AFFECTED: Model D Typewriters above S/N 6435826 Standard and S/N 8413180 "Executive" will have these racks plant installed.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE CHANGE: Mfg. Improvement ● Use Applicable Service Code.

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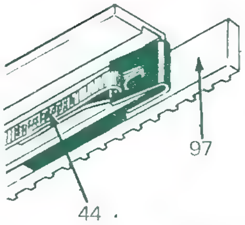
48 ENGINEERING CHANGE

Mech. Code **205 206**

5-20-70
(Revised) 11-18-70

SUBJECT. TENSION TAPE MOUNTING – REDESIGNED – 13" 1/32 & 1/36 PITCH "EXECUTIVE" TYPEWRITER



PURPOSE: Use of a clip to mount the tension tape. Use of self tapping screws to mount escapement rack.

PARTS REQUIRED:

MECH.	REF.	PART NO.	DESCRIPTION	QTY.	PRICE
205	44	1231080	Tape, 13" Black, Used On 13" 1/32 & 1/36 Pitch	1	.65
206	97	1231075	Escapement Rack 13" 1/32 Pitch	1	21.85
	97	1231076	Escapement Rack 13" 1/36 Pitch	1	21.85
	97	1275152	F.I. B/M Escapement Rack 1/32 Pitch	1	22.75
	97	1275153	F.I. B/M Escapement Rack 1/36 Pitch	1	22.75
	98	731626	Screw Mtg. Self Tapping	4	.02

NOTE: B/M's include all parts necessary to replace escapement racks on all former-level machines.

MACHINES AFFECTED: 13" 1/32 & 1/36 pitch "Executive" Typewriters above S/N 8406600.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Use applicable service code.

PARTS INFORMATION: Old-style racks are no longer available. When replacing old-style racks order appropriate B/M.

49 ENGINEERING CHANGE

Mech. Code **205**

5-20-70
(Revised) 7-1-70

SUBJECT: Redesigned Tension Tape Pulley And Stud

PURPOSE: The tension tape pulley is now being mounted by a stud which screws into a tapped hole in the main frame.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
38	62031	Washer, use with stud P/N 1110106	.01
39	7341	Nut, use with stud P/N 1110106	.03
40	1000540	Pulley, use with stud P/N 1110106	.75
40	1191493	Pulley, above Standard S/N 6446000 and "Exec." S/N 8416360	.75
41	1110106	Stud, tension tape pulley — for use only when threads are stripped in Frame. Also, order P/N's 1000540, 7341 & 62031.	.05
41	1191492	Stud, above Standard S/N 6446000 & "Exec." S/N 8416360.	.05

MACHINES AFFECTED: Standard Typewriters above S/N 6446000 and "Executive" Typewriters above S/N 8416360.

NOTE: New and old-style parts are not compatible.

If the threads should strip out of the main frame casting, order the following parts: pulley, P/N 1000540, stud, P/N 1110106, washer, P/N 62031 and nut, P/N 7341.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE OF CHANGE: Manufacturing Improvement ● Use applicable Service Code

PARTS INFORMATION: Former style parts remain available.

50 ENGINEERING CHANGE

Mech. Code **202**

5-20-70
(Revised) 7-1-70

SUBJECT: New-Style Model D "Executive" Front Paper Tables And Scales

PURPOSE: The pitch marks have been eliminated from the paper table and the inch marks have been changed to 1/4" increments (Fig. 1). In addition, the center mark on the following front paper scales has been shifted as indicated below.

LENGTH	PITCH	OLD CENTER	NEW CENTER
13"	1/36	55	56
17"	1/32	65	64
17"	1/36	70	72
20"	1/32	75	76
20"	1/45	105	107

The center mark on all other scales remain the same.

On machines of the above carriage length and pitch prior to this change, replacement of the front paper table will necessitate replacing the front scale also. The converse is true when the front scale needs replacement. To facilitate identification, a pitch stamp has been added to the RH end of the paper scales (Fig. 2).

ADJUSTMENTS: Remain the same.

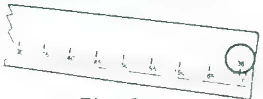


Fig. 2

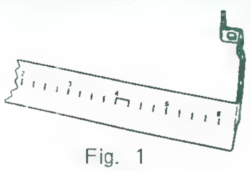


Fig. 1

PARTS REQUIRED:

PART NO.	DESCRIPTION	PRICE
1231026	13" Paper Table, "Executive"	3.95
1231027	17" Paper Table, "Executive"	4.25
1231028	20" Paper Table, "Executive"	4.60

MACHINES AFFECTED: All machines above S/N 8414512 "Executive" have the new paper table & scales installed.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE OF CHANGE: Manufacturing Improvement ● Use applicable Service Code

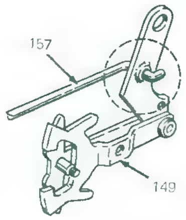
PARTS INFORMATION: Scrap all former level "Executive" front paper tables. Record scrap on a debit memo charging OP HQ Account No. 14-090-0232 and note this CEM as authorization.

51 ENGINEERING CHANGE

Mech. Code **216**

5-20-70

SUBJECT: Redesigned Shift Pusher & Buffer Assembly & Shift Connecting Link



PURPOSE: The shift connecting link has been redesigned to eliminate the c-clip and hot-upset stud. The link is now offset and the shift pusher and lever assembly has an extruded hole were the link connect for more bearing surface.

NOTE: The new-style parts are not compatible with former-style parts.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
149	1191477	Pusher Asm. — Above Std. S/N 6446000 and "Exec." S/N 8416360	.85
157	1191478	Link, Shift Connecting — Above Std. S/N 6446000 And "Exec." S/N 8416360	.35

MACHINES AFFECTED: Model "D" Standard above S/N 6446000 and "Executive" Typewriters above S/N 8416360.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE OF CHANGE: Manufacturing Improvement ● Use applicable Service Code

PARTS INFORMATION: Former level parts remain available.

52 ENGINEERING CHANGE

Mech. Code **207**

7-1-70
(Revised) 11-18-70

SUBJECT: Elimination Of Expand Bellcrank

PURPOSE: The expand bellcrank has been eliminated on Model D "Executive" Typewriters. This change also removes the stud from the left-hand rail brace and the expand operating and connecting links. These parts have been replaced by a single link from the flipper button to the expand cam bellcrank. This change reduces the number of parts and adjustments for this mechanism.

ADJUSTMENTS: With the expand mechanism in its normal position and the expand flipper button parallel to the base of the machine, adjust the link clevis to match the hole in the button.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
217	1191121	Link, expand operating Model D "Exec." above S/N 8400624	.30

MACHINES AFFECTED: Model D "Executive" Typewriters above S/N 8400624.

NOTE: When ordering a rail support and interposer assembly for Model D "Executives" below S/N 8400624 also order expand operating link, P/N 1191121. When a broken bellcrank or stud is found, replace with link P/N 1191121.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

TYPE OF CHANGE: Manufacturing Improvement ● Use Applicable Service Code.

PARTS INFORMATION: Lexington. Order regular or emergency. Former-style links remain available. Expand bellcrank and stud are no longer available. Scrap P/N 1171620, bellcrank. Record scrap on a Debit Memo, charging OP HQ Acct. No. 14-080-0232 and note this CEM as authorization.

IBM Office Products Division Customer Engineering Memorandum

TYPEBAR

53 SERVICE INFORMATION

Mech. Code 219

7-1-70

TYPEBAR OPERATING

Keybutton Model "D" Blanket Part Numbers: Parts numbers listed on page 22, C & D Parts Catalog, F/N 241-5231-5 for individual keybuttons are incorrect and should be disregarded.

New part numbers for Model "D" keybuttons are:

ROW	ACC. GRAY	CHAR. GRAY	D. BLUE
1	1268529	1268533	1268537
2	1268530	1268534	1268538
3	1268531	1268535	1268539
4	1268532	1268536	1268540

Position 41 keybuttons have been changed to standard 2nd row keybuttons. Field orders will be supplied with the standard shaped button.

54 SERVICE INFORMATION

Mech. Code 203

7-1-70

CARRIAGE RETURN

Torque Limiter Carriage Return Tape Installation: The carriage return tape must be twisted 1/2 turn, counter-clockwise, observing from right side of the machine to clear the u-bar stud. Failure to do so will result in frayed and broken tapes.

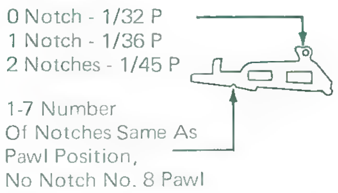
55 SERVICE INFORMATION

Mech. Code 206

7-29-70

ESCAPEMENT

Escapement Pawl Identification "Executive" Typewriter: The following illustrates the location of both pitch identification and pawl number notches.



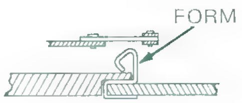
56 SERVICE INFORMATION

Mech. Code 214

7-29-70

CARBON RIBBON

Ribbon Feed Erratic-"Executive" Typewriter: A possible interference may exist on Model D "Executive" Typewriters in the area of the ribbon selector bracket. Because of a very close condition, the front LH bottom panel clip may interfere with proper ribbon feed. Check for this condition and form the clip for greater clearance.



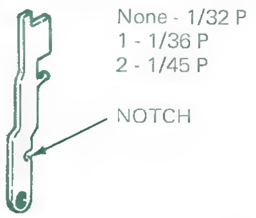
57 SERVICE INFORMATION

Mech. Code 207

7-29-70

ESCAPEMENT CONTROL

Interposer Identification Notch: The following illustrates the location of the pitch identification notch.



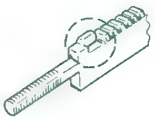
58 SERVICE INFORMATION

Mech. Code 210

7-29-70

MARGIN

Final Stop Eliminated: The final stop (Ref. 5-210) has been replaced by a swaged form on the margin rack. Also, the plating of the margin rack has been changed to zinc phosphate to facilitate manufacturing.



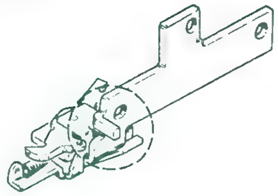
59 SERVICE INFORMATION

Mech. Code 206

7-29-70

ESCAPEMENT

Escapement Pawl Bracket–Modified: The Model "D" Standard escapement pawl bracket has been modified in order to eliminate a roll-pin from the rear rail. Replacement of an old-style pawl bracket will necessitate removing the roll-pin from the rear rail.



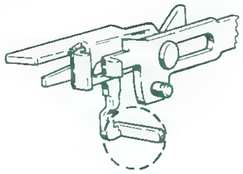
60 SERVICE INFORMATION

Mech. Code 218

7-29-70

TAB

Tab Lever–Modified: The lower tab lever extension has been modified, as illustrated, to eliminate the nylon stop on the rear rail (Ref. 63-218). Installation of the new lever on machines prior to this change will necessitate removing the nylon stop.



61 ENGINEERING CHANGE

Mech. Code 216

7-29-70

SUBJECT: Segment Guide Spring Breakage

PURPOSE: To authorize Code 32 for replacement of broken segment guide springs.

NOTE: When both lower guide springs are broken, use a file to smooth the edge of the segment support where the springs are mounted.

MACHINES AFFECTED: Model "D" Standard Typewriter between S/N 6280312 and 6418605.
Model "D" "Executive" Typewriters between S/N 8358999 and 8407540.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● CODE 32 ● EXPIRES: 7/30/71

62 ENGINEERING CHANGE

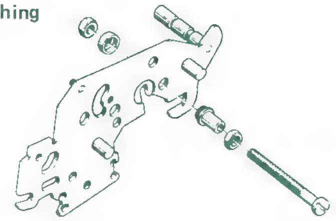
Mech. Code 202

7-29-70

SUBJECT: Paper Release Lever Bushing

SYMPTOM: The paper release lever bushing may break.

SOLUTION: Order B/M 1275826 which contains a replacement bushing, 2 nuts, a backup plate and screw. The bushing can be inserted into the end plate by tightening both nuts as illustrated.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
367	1275826	B/M, Bushing Replacement	.85

MACHINES AFFECTED: Model D Standard between S/N 6435785 & 6470897, Model D "Executive" between S/N 8409829 & 8423934.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● CODE: 32 ● EXPIRES: 8/1/71

63 SERVICE INFORMATION

Mech. Code 207

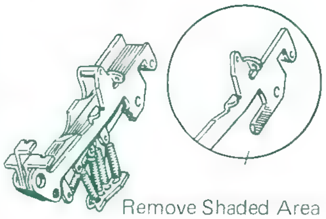
8-7-70

INTERPOSER CAGE ASSEMBLY–BINDS

Previously published in ATB 168.

To eliminate binds, break off the lug on the right rear of the interposer side frame where it engages the trip lever stud. The lug may be broken off in the Field by using the t-bender from the bottom of the machine. This lug is brittle and breaks easily. "Executive" Typewriters above S/N 8416360 will have this lug removed.

NOTE: Remove only the right rear lug as shown.



Remove Shaded Area

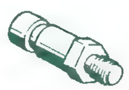
IBM, "Executive", "Hextowriter", "IBM EXECUTARY", and "Selectric" are registered trademarks of the International Business Machines Corp.

64 ENGINEERING CHANGE

Mech. Code 207

8-7-70

SUBJECT: Selector Bail Mounting Plate Stud—Redesigned



PURPOSE: To facilitate assembly. The selector bail mounting plate stud now incorporates a 6-40 thread. The mounting holes in both side frames have been tapped to accept the new stud. Standard and "Executive" Typewriters now use the same side frames.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
75	1190780	Stud, Selector Bail	.15

NOTE: For "Executive" Typewriters above approximate S/N 8410710.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

CHANGE TYPE: Manufacturing ● Use applicable service code.

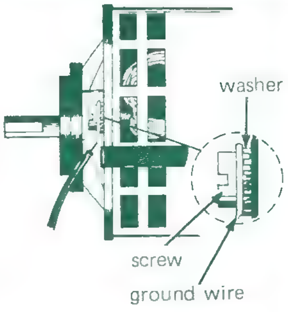
65 SAFETY

Mech. Code 211

8-26-70

(Revised) 11-18-70

SUBJECT: Motor Ground Wire—3-Wire Model D—Possible Electrical Safety Hazard



SAFETY LOCATION: There is a potential safety hazard with the motor ground wire screw. A longer screw was substituted during manufacture and **must be** replaced. Some motors may have been installed so that the tip of the screw can contact the motor winding.

SAFETY CORRECTIVE ACTION: Replace the motor ground wire screw (Ref. 132, Mech. 211) with screw, P/N 1177076, and washer, P/N 56079, on the next service call or inspection.

NOTE: The washer is to be placed between the motor frame and ground lug.

PARTS REQUIRED:

MECH.	REF.	PART NO.	DESCRIPTION
211	132	1275586	Screw — Self-Threading
	123	56079	Washer

MACHINES AFFECTED: Model D's with 3-wire cords between S/N 6301863 to 6344240 Standard and 8367509 to 8382891 "Executive" Typewriters.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Safety ● CODE: 32

66 ENGINEERING CHANGE

Mech. Code 202

9-23-70

SUBJECT: Repositioning Bellcrank — Eliminated

PURPOSE: To reduce parts and simplify the mechanism, a single link has replaced the repositioning bellcrank, P/N 1171020, its mounting stud, and the upper and lower links.

ADJUSTMENTS: Adjust link so the flipper button is parallel to the base of the machine.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
358	1231105	Link Connecting	.55
367	1231092	Bracket Stop	.15
368	0110956	Spring Restoring	.04

MACHINES AFFECTED: "Executive" Typewriters above S/N 8411330 have this change plant installed.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Use applicable service code.

PARTS INFORMATION: Order Lexington. Former-style parts remain available.

67 SAFETY

Mech. Code 211

9-23-70

SUBJECT: "Quick-Wire" Switches — Loose Wires

SAFETY LOCATION: Off/On Switch. Many switches used on late model "Selectric" and Typebar Typewriters, and other OP equipment, incorporate the "Quick-Wire" connection feature.

SAFETY PRECAUTIONS: When experiencing electrical or switch problems the possibility exists that the wires are not being held firmly in place by this "Quick-Wire" feature.

CAUTION: Before checking this connection, remove power by unplugging the machine. Pull on each of the 4 wires — they should remain firmly locked in the switch. If any of the four wires are not held firmly, the switch should be replaced.

NOTE: The remaining wires can be removed by inserting a small "Bristo" wrench (or similar tool) into the switch beside the individual wires.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Safety ● CODE: 32

68 ENGINEERING CHANGE

Mech. Code 219

10-21-70

(Revised) 11-18-70

SUBJECT: Center — Underscore — Position 23

PURPOSE: To provide a more reliable underscore. The basket location of the underscore has been relocated to position 23. By utilizing cross-over bails, the keyboard remains unchanged.

ADJUSTMENTS:

Individual Keylever Trip Adjustment: Insert the blade of a screwdriver into the rectangular shaped slot at the top of the auxiliary keylever and rotate the blade. Front to rear rotation decreases clearance; rear to front rotation increases clearance.

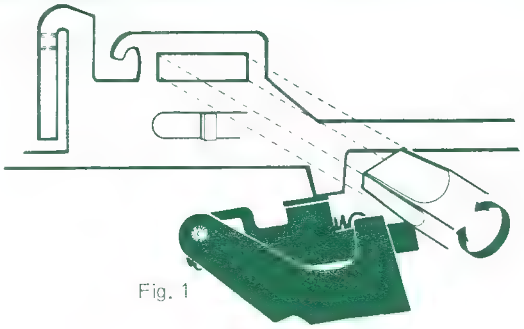


Fig. 1

The position 23 auxiliary keylever should be adjusted to trip the cam for a single operation just as the nylon repeat guide touches the front guide comb.

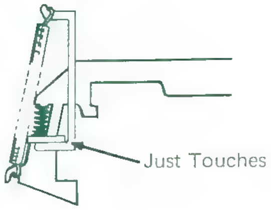


Fig. 2

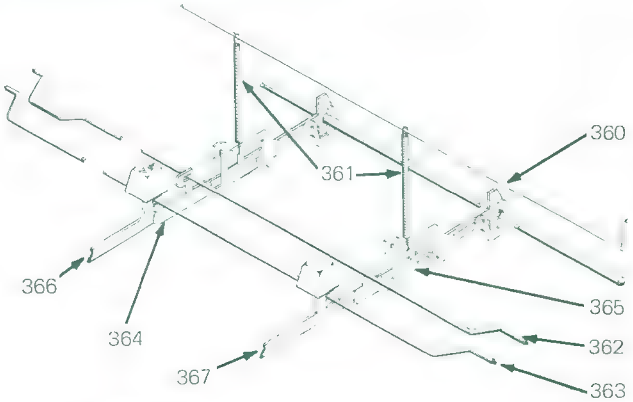
LUBRICATION SPECIFICATIONS

IBM No. 10 Oil

1. Cross-over bails at the side frame pivot points.

IBM No. 23 Grease

1. Primary keylever cross-over bail hooks.
2. Auxiliary keylever cross-over bail hooks.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	QTY.	PRICE
360	1190693	Spring Support, Std. & "Exec."	1	.15
360	1190692	Spring Support Dual Ribbon	1	.75
361	1071691	Spring, Std. & "Exec."	2	.05
361	1071687	Spring, Dual Ribbon	2	.05
362	1190690	Rear Bail, Non-Repeat	1	.30
363	1190691	Front Bail, Repeat	1	.25

IBM Office Products Division

Customer Engineering Memorandum

TYPEBAR

53 SERVICE INFORMATION

Mech. Code 219 | 7-1-70

TYPEBAR OPERATING

Keybutton Model "D" Blanket Part Numbers: Parts numbers listed on page 22, C & D Parts Catalog, F/N 241-5231-5 for individual keybuttons are incorrect and should be disregarded.

New part numbers for Model "D" keybuttons are:

ROW	ACC. GRAY	CHAR. GRAY	D. BLUE
1	1268529	1268533	1268537
2	1268530	1268534	1268538
3	1268531	1268535	1268539
4	1268532	1268536	1268540

Position 41 keybuttons have been changed to standard 2nd row keybuttons. Field orders will be supplied with the standard shaped button.

54 SERVICE INFORMATION

Mech. Code 203 | 7-1-70

CARRIAGE RETURN

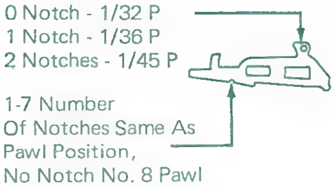
Torque Limiter Carriage Return Tape Installation: The carriage return tape must be twisted 1/2 turn, counter-clockwise, observing from right side of the machine to clear the u-bar stud. Failure to do so will result in frayed and broken tapes.

55 SERVICE INFORMATION

Mech. Code 206 | 7-29-70

ESCAPEMENT

Escapement Pawl Identification "Executive" Typewriter: The following illustrates the location of both pitch identification and pawl number notches.

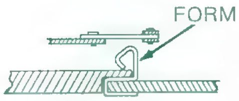


56 SERVICE INFORMATION

Mech. Code 214 | 7-29-70

CARBON RIBBON

Ribbon Feed Erratic-"Executive" Typewriter: A possible interference may exist on Model D "Executive" Typewriters in the area of the ribbon selector bracket. Because of a very close condition, the front LH bottom panel clip may interfere with proper ribbon feed. Check for this condition and form the clip for greater clearance.

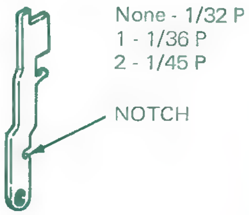


57 SERVICE INFORMATION

Mech. Code 207 | 7-29-70

ESCAPEMENT CONTROL

Interposer Identification Notch: The following illustrates the location of the pitch identification notch.

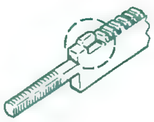


58 SERVICE INFORMATION

Mech. Code 210 | 7-29-70

MARGIN

Final Stop Eliminated: The final stop (Ref. 5-210) has been replaced by a swaged form on the margin rack. Also, the plating of the margin rack has been changed to zinc phosphate to facilitate manufacturing.

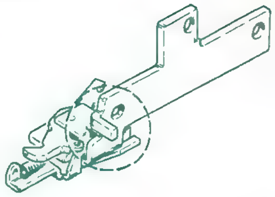


59 SERVICE INFORMATION

Mech. Code 206 | 7-29-70

ESCAPEMENT

Escapement Pawl Bracket—Modified: The Model "D" Standard escapement pawl bracket has been modified in order to eliminate a roll-pin from the rear rail. Replacement of an old-style pawl bracket will necessitate removing the roll-pin from the rear rail.

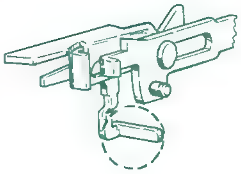


60 SERVICE INFORMATION

Mech. Code 218 | 7-29-70

TAB

Tab Lever—Modified: The lower tab lever extension has been modified, as illustrated, to eliminate the nylon stop on the rear rail (Ref. 63-218). Installation of the new lever on machines prior to this change will necessitate removing the nylon stop.



61 ENGINEERING CHANGE

Mech. Code 216 | 7-29-70

SUBJECT: Segment Guide Spring Breakage

PURPOSE: To authorize Code 32 for replacement of broken segment guide springs.

NOTE: When both lower guide springs are broken, use a file to smooth the edge of the segment support where the springs are mounted.

MACHINES AFFECTED: Model "D" Standard Typewriter between S/N 6280312 and 6418605.
Model "D" "Executive" Typewriters between S/N 8358999 and 8407540.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● *CODE 32* ● *EXPIRES: 7/30/71*

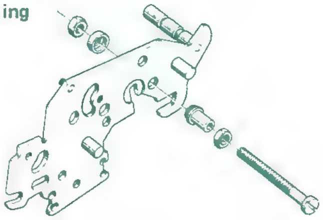
62 ENGINEERING CHANGE

Mech. Code 202 | 7-29-70

SUBJECT: Paper Release Lever Bushing

SYMPTOM: The paper release lever bushing may break.

SOLUTION: Order B/M 1275826 which contains a replacement bushing, 2 nuts, a backup plate and screw. The bushing can be inserted into the end plate by tightening both nuts as illustrated.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION
367	1275826	B/M, Bushing Replacement

NOTE: Prices not available at printing. Model D Standard between S/N 6435785 & 6470897, Model D "Executive" between S/N 8409829 & 8423934.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● *CODE: 32* ● *EXPIRES: 8/1/71*

63 SERVICE INFORMATION

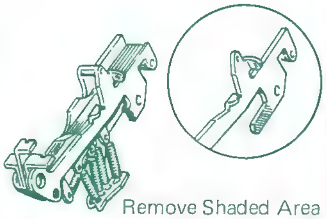
Mech. Code 207 | 8-7-70

INTERPOSER CAGE ASSEMBLY—BINDS

Previously published in ATB 168.

To eliminate binds, break off the lug on the right rear of the interposer side frame where it engages the trip lever stud. The lug may be broken off in the Field by using the t-bender from the bottom of the machine. This lug is brittle and breaks easily. "Executive" Typewriters above S/N 8416360 will have this lug removed.

NOTE: Remove only the right rear lug as shown.



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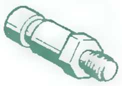
64 **ENGINEERING CHANGE** Mech. Code 207 8-7-70

SUBJECT: Selector Bail Mounting Plate Stud—Redesigned



PURPOSE: To facilitate assembly. The selector bail mounting plate stud now incorporates a 6-40 thread. The mounting holes in both side frames have been tapped to accept the new stud. Standard and "Executive" Typewriters now use the same side frames.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
75	1190780	Stud, Selector Bail	.15

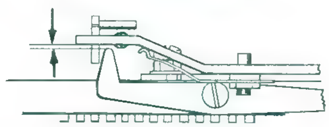
NOTE: For "Executive" Typewriters above approximate S/N 8410710.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

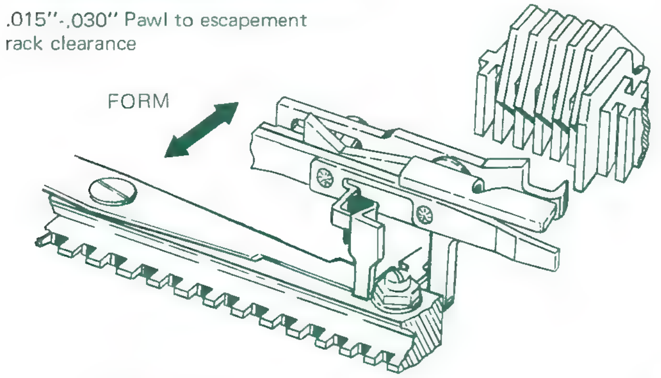
CHANGE TYPE: Manufacturing ● Use applicable service code.

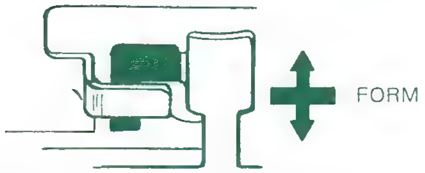
CEM No. 71 (Cont'd)

Clearance at Rest

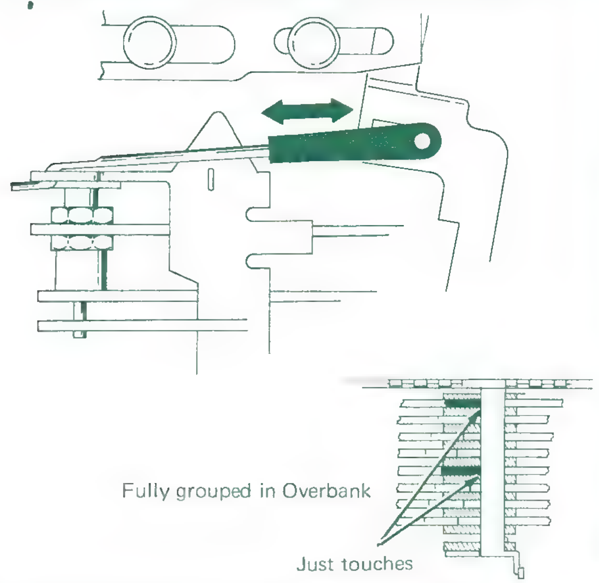


6. **Pawl Clearance** — With the tab lever latched, form the upright lug on the pawl release lever so the pawls clear the escapement rack by .015" to .030".



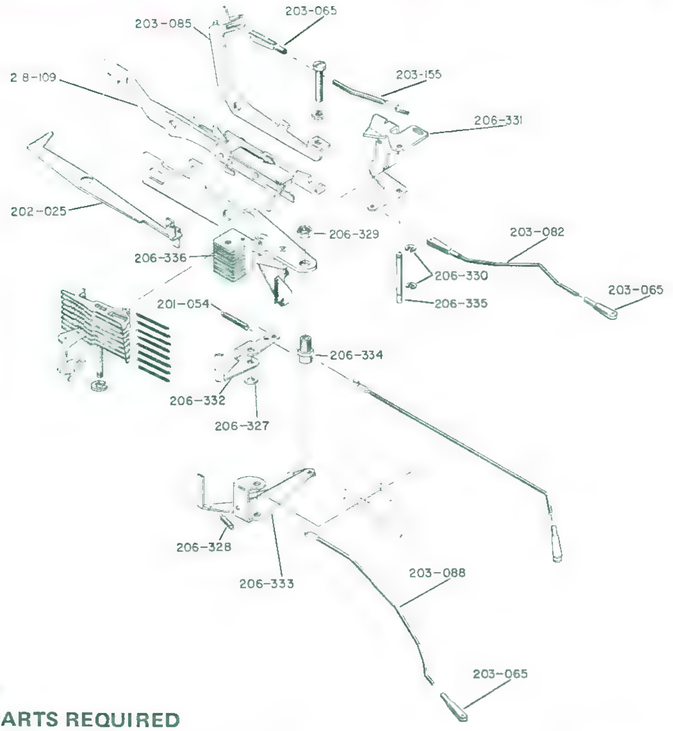


7. **Automatic Grouping Link** — With the carriage in full overbank, adjust the automatic grouping link clevis to raise the pawls .010" to .035" off the bottom of the escapement rack (fully grouped).



Note: Use the left hand margin, not the side frame, when making this adjustment.

Adjustments for carriage return, tab, backspace, and manual carriage release remain the same.



PARTS REQUIRED

MECH.	REF.	PART NO.	DESCRIPTION	PRICE
202	025	1231153	Lever, Pawl Release	.40
203	082	1231159	Link, Clutch Unlatch	.40
203	085	1231155	Bellcrank, Margin Control	.75
203	088	1231157	Link Pawl Release	.45
203	155	1231158	Link, Auto Grouping	.35
206	325	1231163	Pawl Block Asm., 1/32P, "Simplified"	21.00
206	325	1231164	Pawl Block Asm, 1/36P, "Simplified"	21.00
206	326	1275650	F.I. B/M, 1/32P	27.75
206	326	1275651	F.I. B/M, 1/36P	27.75

Note: F.I. B/M's contain all necessary parts, including esc. pawl block asm., to convert to "simplified" escapement on "C" & "D" "Executive" Typewriters.

206	327	0264641	Retainer, Pawl Align Lever	.04
206	328	1071687	Spring, Group Lever Arm	.03
206	329	1090550	Nut, Grouping Lever	.02
206	330	2175670	Retainer	.03
206	331	1231136	Lever, Intermediate Pawl Release	.40
206	332	1231138	Lever, Pawl Aligning	.35
206	333	1231143	Lever, Pawl Release And Grouping	.75
206	334	1231145	Eccentric, Grouping Lever	.75
206	335	1231146	Pin, Grouping Lever	.15
206	336	1231151	Block, Escapement	4.50
218	109	1231154	Tab Lever Asm.	4.00

MACHINES AFFECTED: Above S/N 8434611 have this change.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

RECORDS: Note this CEM in the picture section of Parts Catalog (page 14) under "Executive" Typewriter Escapement, (Mech. 206).

CHANGE TYPE: Reliability ● *Use applicable service code.*

PARTS INFORMATION: Order Lexington. Former-level parts remain available except pawl block assemblies P/N 1274715 & 1274811. Use until stock is depleted then reorder B/M, P/N 1275650 & 1275651 for use on machines prior to this change.

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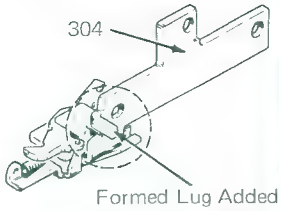
72 ENGINEERING CHANGE

Mech. Code 203-206

12-2-70

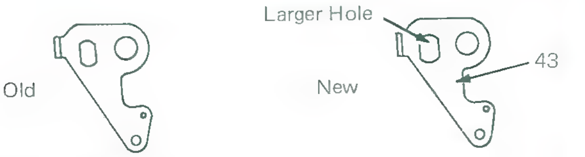
SUBJECT: **Pawl Release Bellcrank And Escapement Pawl Bracket — Modified**



PURPOSE: To facilitate manufacturing. The pawl release bellcrank and Model "D" Standard escapement pawl bracket asm. have been modified in order to eliminate a roll-pin from the rear rail.

Replacement of the pawl bracket asm on machines prior to this change will necessitate removing the roll-pin from the rear rail and installing the new-level pawl release bellcrank.

The modified pawl release bellcrank will operate with either the former-level or new-level pawl bracket asm.



PARTS REQUIRED:

MECH.	REF.	PART NO.	DESCRIPTION	PRICE
203	43	1171055	Bellcrank, Pawl Release	.05
(Pawl Bracket Asm.)				
206	304	1191076	6 2/5 Pitch	4.00
		1191077	8 Pitch	4.00
		1191078	9 Pitch	4.00
		1191079	10 Pitch	4.00
		1191080	11 Pitch	4.00
		1191081	12 Pitch	4.00
		1191082	14 Pitch	4.00

MACHINES AFFECTED: Model D's Standards above S/N 6430384.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Application 3 ● Use applicable service code.

PARTS INFORMATION: Order new-level parts. Scrap all former-level pawl bracket asm. P/N's 1171026, 1171070, 1171078, 1171079, 1171080, 1171081 & 1171082. Scrap former-level pawl release bellcrank, P/N 1171055, when new-level is received. Record scrap on a Debit Memo, charging OP HQ Acct. No. 14-090-0232 and note this CEM as authorization.

73 SAFETY

Mech. Code 211

12-2-70

SUBJECT: **Line Cord Replacement**

SAFETY LOCATION: Any damaged line cord, plug, machine receptical or lead wires.

SAFETY PRECAUTIONS. The use of a replacement type plug is not authorized on OPD Typewriters. Double insulation standards applying to current production machines, require a molded plug at the end of the line cord.

SAFETY CORRECTIVE ACTION: The same diameter cord must be used for replacement. The former level large diameter cord cannot be replaced with the current level smaller diameter cord. There is insufficient insulation on the smaller cord to allow a safe installation without the use of the molded strain reliefs made on the exact replacement cord.

Line cord restraining clamps should hold the line cord securely. They should be replaced if necessary, not formed to meet this condition. Care must be taken to route the wires to prevent their contact with moving parts.

Taut line cords can cause damage to cord insulation, resulting in a potential safety hazard. Leave sufficient slack in line cords to allow the machine to tilt up.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Safety ● Application 3 ● Use applicable service code.

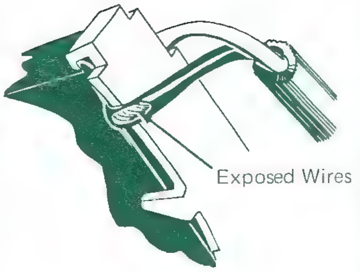
74 SAFETY

Mech. Code 211

12-2-70

SUBJECT: **On/Off Switch — Damaged Wire**

SAFETY LOCATION: On/Off switch and lead wires. During typewriter manufacturing a lead wire of this switch may have been damaged by a rough side frame. This damage could result in an exposed right rear wire in the area where the lead wires enter the switch.



SAFETY PRECAUTIONS: This condition can be observed by tilting the machine up and observing the switch wires from the bottom.

Exercise caution when removing a switch as this damage can occur if the side frame is rough.

SAFETY CORRECTIVE ACTION: On the next service call or inspection, take appropriate action as outlined on page 7 of the Combined Safety CEM, Form No. 241-5493-1, dated May, 1970, under "Physical or Visual Check", paragraph one.

MACHINES AFFECTED: Model D's between S/N 6495098 to 6502876 Standard. S/N 8430920 to 8435181 "Executive" Typewriter.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Safety ● Application 2 ● CODE: 32

75 ENGINEERING CHANGE

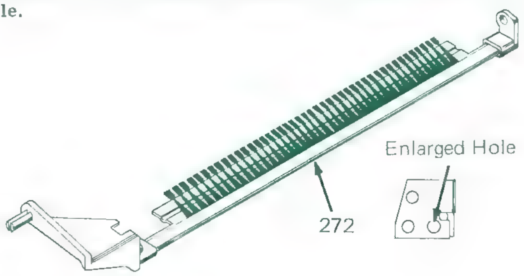
Mech. Code 219

12-2-70

SUBJECT: **Resilient Keyboard — New-Style**

PURPOSE: To facilitate assembly. A new snap-on resilient keyboard bar has been released. The LH mounting screw has been replaced by a molded protrusion on the bar. Also, the LH mounting hole in the front frame has been enlarged and is no longer tapped.

Replacement of the front frame on former-level machines with a current level frame will necessitate updating the resilient keyboard to the new-style.



PARTS REQUIRED:

MECH.	REF.	PART NO.	DESCRIPTION	PRICE
219	272	1191498	Resilient Keyboard Bar Assembly	1.45

MACHINES AFFECTED: Above S/N 6489767 Standard and 8430332 "Executive" Typewriters have this plant installed.

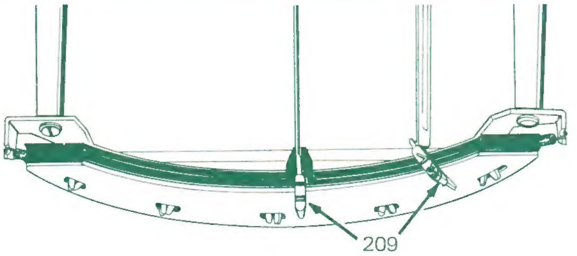
THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Application 3 ● Use applicable service code.

PARTS INFORMATION: Order Lexington. Former-level resilient keyboards and mounting screws remain available for Field use.

CEM No. 68 (Cont'd)

364	1190689	Auxiliary Keylever, Repeat	1	1.45
365	1190688	Auxiliary Keylever, Non-Repeat	1	1.45
366	1190683	Keylever, Pos. 23	1	1.25
367	1190684	Keylever, Pos. 39 First Row	1	1.25
367	1190685	Keylever, Pos. 41 Second Row	1	1.25
367	1190686	Keylever, Pos. 42 Third Row	1	1.25
367	1190687	Keylever, Pos. 40 Fourth Row	1	1.25



TYPEBAR Ref. No. 209

TYPE STYLE	POS. 23 (_/—)	Pos. 39 (&/7)
Prestige Elite (SE)	1275930	1275878
Prestige Pica (SP)	1275931	1275879
Courier (SM)	1275934	1275881
Elite (E)	1275903	1275851
Elite Gothic SC (GE)	1275905	1275853
Elite Gothic DC (F)	1275905	1275853
Large Elite (LE)	1275915	1275863
Pica (P)	1275902	1275850
Pica Gothic SC (G)	1275904	1275852
Pica Gothic DC (H)	1275904	1275852
Bookface Academic (BA)	1275911	1275859
Dual Basic (DB)	1275916	1275864
Diplomat (B2)	1275924	1275872
Arcadia (JM)	1275951	1275898
Heritage (PJ)	1275947	1275894
Modern (PM)	1275939	1275886
Documentary (PE)	1275940	1275887
Secretarial (PS)	1275938	1275885
Bold Face No. 1 (PO)	1275937	1275884
Mid Century (PF)	1275943	1275890
Bold Face No. 2 (PB)	1275945	1275892
Artisan 12 (G2)	1275932	1275880
Manifold 10 SC (H3)	1275927	1275875

To obtain a Typebar configuration which has not been listed, order from Type Available Catalog using special type order form and blanket typebar P/N 1268329.

NOTE: The typebar rest pad, P/N 1116773, and rest pad frame, P/N 1115140, have been modified to incorporate a cantilever finger for stabilizing the position 23 underscore. The new style modified typebar rest pad assembly is compatible with all Model C and D typewriters. However, the old style rest pad is not to be used on center underscore machines. Field conversion of former level machines to center underscore is not feasible at this time.

MACHINES AFFECTED: Model D's above approximate S/N 6498584 Standard and S/N 8432881 "Executive". Decimal tab machines are not affected by this change.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● Use applicable service code.

PARTS INFORMATION: Order Lexington.

69 SERVICE INFORMATION

10-21-70

PUBLICATIONS — MODEL A & B — REVISED

As of September 2, 1970, the following Model A & B publications have been released to the Field.

FORM NO.	NAME	CUST. PRICE
241-5232-1	Parts Catalog	.70
241-5233-0	Part No./Price List	.65

70 ENGINEERING CHANGE

Mech. Code 204

11-4-70 (Revised) 12-2-70

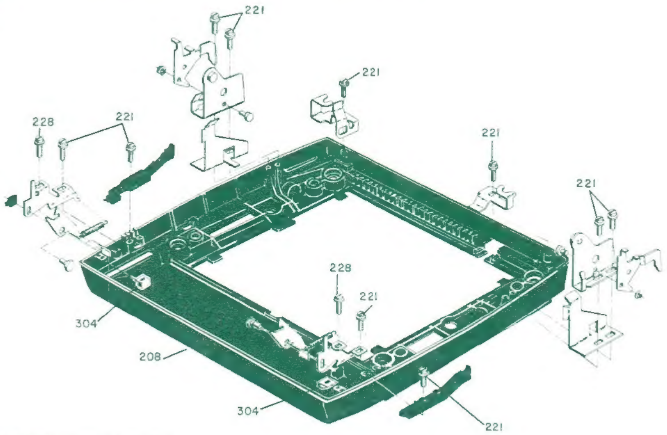
SUBJECT: Model D Standard Bottom Cover — Material Change

PURPOSE: To facilitate manufacturing. The raven black bottom cover is now manufactured from Polyvinyl chloride.

ADJUSTMENTS:

1. Remove the keyplate mounting brackets.
2. Loosen the top cover hinge arm screws, the front latch screws, the hinge arm bracket screws and the rear cover latch bracket screws.
3. With the front cover latched, adjust the front latches (front to rear) to obtain the desired overlap of the top cover with the lip on the bottom cover.
4. Adjust the top cover hinge arms for a proper cover fit at the hinge arm bracket. Avoid an interference fit.
5. Adjust the hinge arm brackets. Position the brackets toward the rear of the machine until contact is just made between the round stud on the bracket and the rear portion of the hinge arm.
6. With the rear cover installed, adjust the rear cover bracket to obtain a .025" gap between the rear cover and the top cover. This adjustment is accomplished by inserting a screwdriver through the slot provided in the bottom of the vinyl tub.

NOTE: The preceding adjustments should provide you with a good cover fit. However, refinement of individual adjustments might be necessary to obtain a more desirable fit. Individual adjustments can be made without repeating the entire procedure.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	QTY.	PRICE
208	1231050	Vinyl Bottom Cover Raven Black	1	14.00
221	1164577	Screw	10	.01
228	1132669	Screw	2	.04
304	1231037	Clip	2	.06

NOTE: Parts illustrated that are not referenced can be ordered from the Parts Catalog.

MACHINES AFFECTED: Standard Typewriters above approximate S/N 6492578.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Manufacturing ● Use applicable service code.

PARTS INFORMATION: Former-level die-cast bottom covers remain available. Converting to the new vinyl bottom cover from a former-level will necessitate ordering a complete set of bottom cover hardware from Lexington.

71 ENGINEERING CHANGE

Mech. Code 206

11-4-70 (Revised) 12-2-70

SUBJECT: Escapement Pawl Block Assembly — "Executive" Typewriter — Redesigned

PURPOSE: To simplify the pawl release and grouping mechanism. This change reduces the number of parts, improves serviceability, and increases reliability.

Removal and replacement procedure:

1. Remove the rear cover and the tab set and clear bracket assembly.
2. Disconnect the pawl aligning link, carriage return pawl release link, clutch unlatching link, automatic grouping link, and aligning lever restoring spring.
3. Remove the tab lever mounting stud, but do not remove the tab lever.
4. Remove the margin control bellcrank.

IBM, "Executive", "Hektowriter", "IBM EXECUTARY", and "Selectric" are registered trademarks of the International Business Machines Corp.

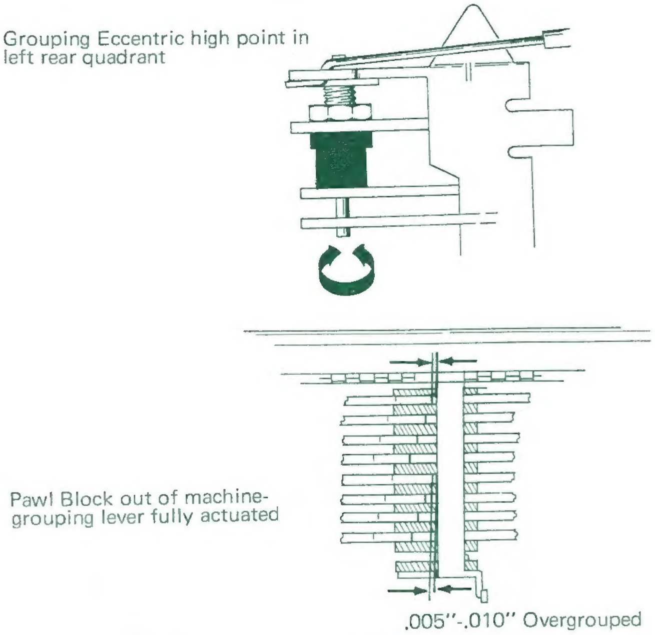
5. Block the carriage and remove the pawl block mounting screws.
6. Remove the escapement pawl block assembly from the rear of the machine.

To replace the assembly, reverse the above procedure.

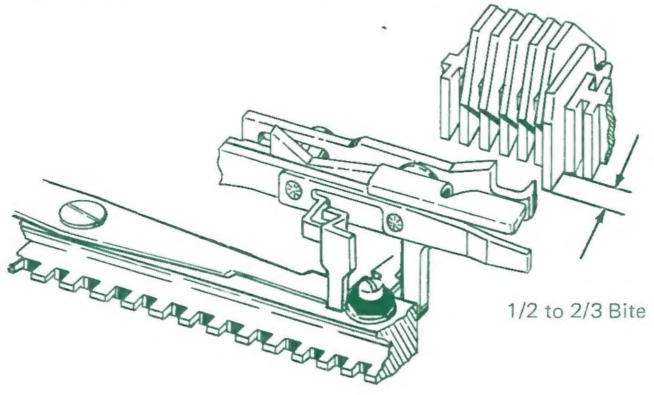
Service Hint, Pawl Spring Replacement: Remove the intermediate release and grouping lever by removing the two c-clips and mounting pin. The spring bracket and spring holes in the pawls are then easily accessible.

ADJUSTMENTS:

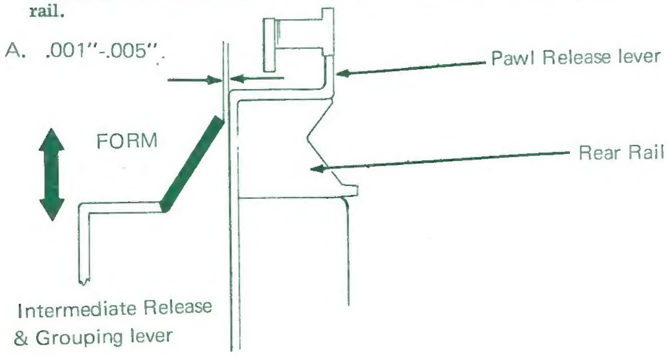
1. Release and Grouping Lever Eccentric — preliminary (use only when the pawl block is out of machine) — Adjust the eccentric for .005" to .010" overgrouping with the release and grouping lever fully actuated. Keep the highpoint in the rear left hand quadrant.


Grouping Eccentric high point in left rear quadrant
Pawl Block out of machine-grouping lever fully actuated
.005"-.010" Overgrouped

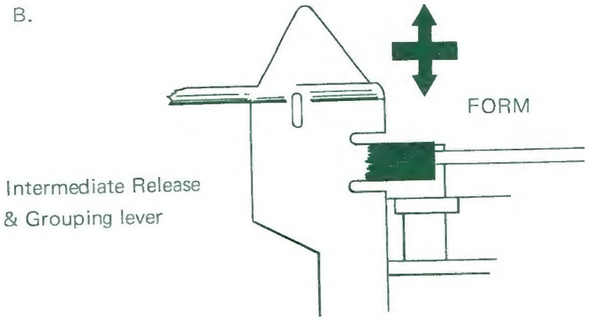
2. Tab Latch Eccentric — Adjust the eccentric for 1/2 to 2/3 overlap of a set tab stop by the check lever when the tab lever is latched out. Keep the eccentric in the right half of its orbit.

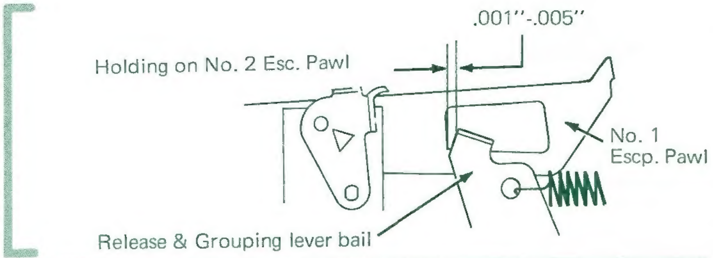


3. Release and Grouping Lever Rest Position —
   (a) Form the angular tip on the intermediate pawl release lever for .001" to .005" between the angular tip and the pawl release lever extension. **Note:** Be sure that the extension is resting against the rail.

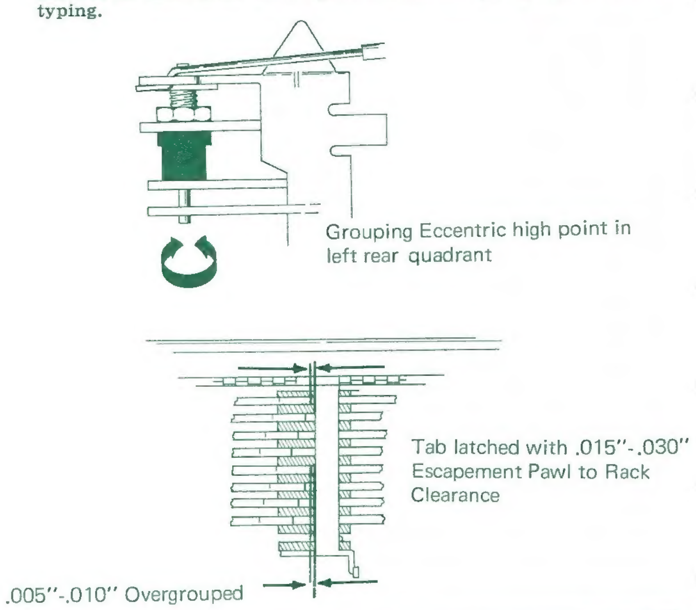


(b) Form the lug on the intermediate pawl release and grouping lever for .001" to .005" clearance between the left side of the No. 1 pawl grouping window and the bail of the pawl release and grouping lever, while holding on the No. 2 pawl. This clearance may be observed from the bottom of the machine. **Caution:** Disconnect all links before making this adjustment.

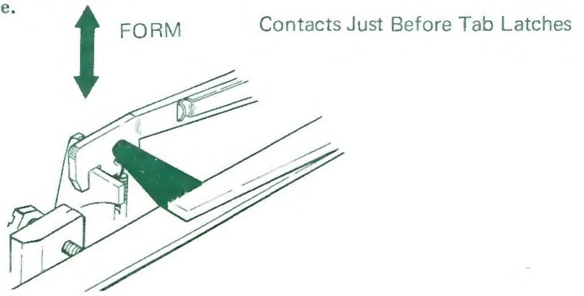




4. Release and Grouping Lever Eccentric — With all links still disconnected, adjust the eccentric so that full grouping occurs just before the pawl tips reach the top of the escapement rack teeth. This adjustment can be observed by operating the pawl release and grouping lever by hand. With .015" to .030" pawl to rack clearance, the pawls should be overgrouped by .005" to .010". Observe that there is no movement of the pawl release and grouping lever when typing.


Grouping Eccentric high point in left rear quadrant
Tab latched with .015"-.030" Escapement Pawl to Rack Clearance
.005"-.010" Overgrouped

5. Pawl Release Lever — Form the ear on the left end of the pawl release lever so the left end of the tab lever contacts it just before the tab latches. **Caution:** With the tab cam on its high point, the release and grouping lever **must have** some remaining motion. If the release and grouping lever contacts the pawl block before the high point, the upright bail may be damaged. At rest, there should also be clearance between the left end of the tab lever and the pawl release lever. This ensures that the pawl release lever can fully restore.



53 SERVICE INFORMATION

Mech. Code 219

7-1-70

TYPEBAR OPERATING

Keybutton Model "D" Blanket Part Numbers: Parts numbers listed on page 22, C & D Parts Catalog, F/N 241-5231-5 for individual keybuttons are incorrect and should be disregarded.

New part numbers for Model "D" keybuttons are:

ROW	ACC. GRAY	CHAR. GRAY	D. BLUE
1	1268529	1268533	1268537
2	1268530	1268534	1268538
3	1268531	1268535	1268539
4	1268532	1268536	1268540

Position 41 keybuttons have been changed to standard 2nd row keybuttons. Field orders will be supplied with the standard shaped button.

54 SERVICE INFORMATION

Mech. Code 203

7-1-70

CARRIAGE RETURN

Torque Limiter Carriage Return Tape Installation: The carriage return tape must be twisted 1/2 turn, counter-clockwise, observing from right side of the machine to clear the u-bar stud. Failure to do so will result in frayed and broken tapes.

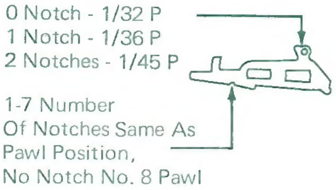
55 SERVICE INFORMATION

Mech. Code 206

7-29-70

ESCAPEMENT

Escapement Pawl Identification "Executive" Typewriter: The following illustrates the location of both pitch identification and pawl number notches.


0 Notch - 1/32 P
1 Notch - 1/36 P
2 Notches - 1/45 P
1-7 Number Of Notches Same As Pawl Position, No Notch No. 8 Pawl

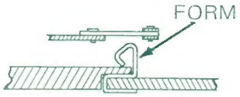
56 SERVICE INFORMATION

Mech. Code 214

7-29-70

CARBON RIBBON

Ribbon Feed Erratic-"Executive" Typewriter: A possible interference may exist on Model D "Executive" Typewriters in the area of the ribbon selector bracket. Because of a very close condition, the front LH bottom panel clip may interfere with proper ribbon feed. Check for this condition and form the clip for greater clearance.



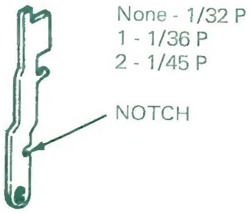
57 SERVICE INFORMATION

Mech. Code 207

7-29-70

ESCAPEMENT CONTROL

Interposer Identification Notch: The following illustrates the location of the pitch identification notch.



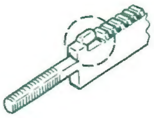
58 SERVICE INFORMATION

Mech. Code 210

7-29-70

MARGIN

Final Stop Eliminated: The final stop (Ref. 5-210) has been replaced by a swaged form on the margin rack. Also, the plating of the margin rack has been changed to zinc phosphate to facilitate manufacturing.



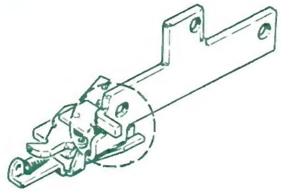
59 SERVICE INFORMATION

Mech. Code 206

7-29-70

ESCAPEMENT

Escapement Pawl Bracket—Modified: The Model "D" Standard escapement pawl bracket has been modified in order to eliminate a roll-pin from the rear rail. Replacement of an old-style pawl bracket will necessitate removing the roll-pin from the rear rail.



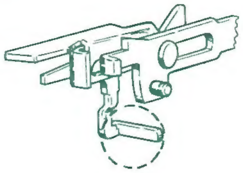
60 SERVICE INFORMATION

Mech. Code 218

7-29-70

TAB

Tab Lever—Modified: The lower tab lever extension has been modified, as illustrated, to eliminate the nylon stop on the rear rail (Ref. 63-218). Installation of the new lever on machines prior to this change will necessitate removing the nylon stop.



61 ENGINEERING CHANGE

Mech. Code 216

7-29-70

SUBJECT: **Segment Guide Spring Breakage**

PURPOSE: To authorize Code 32 for replacement of broken segment guide springs.

NOTE: When both lower guide springs are broken, use a file to smooth the edge of the segment support where the springs are mounted.

MACHINES AFFECTED: Model "D" Standard Typewriter between S/N 6280312 and 6418605.
Model "D" "Executive" Typewriters between S/N 8358999 and 8407540.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● *CODE 32* ● *EXPIRES: 7/30/71*

62 ENGINEERING CHANGE

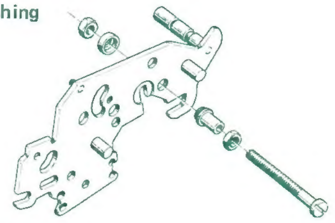
Mech. Code 202

7-29-70

SUBJECT: **Paper Release Lever Bushing**

SYMPTOM: The paper release lever bushing may break.

SOLUTION: Order B/M 1275826 which contains a replacement bushing, 2 nuts, a backup plate and screw. The bushing can be inserted into the end plate by tightening both nuts as illustrated.



PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION
367	1275826	B/M, Bushing Replacement

NOTE: Prices not available at printing. Model D Standard between S/N 6435785 & 6470897, Model D "Executive" between S/N 8409829 & 8423934.

THE FOLLOWING INFORMATION FOR IBM USE ONLY.

CHANGE TYPE: Reliability ● *CODE: 32* ● *EXPIRES: 8/1/71*

63 SERVICE INFORMATION

Mech. Code 207

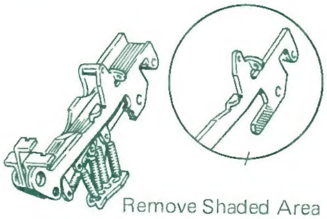
8-7-70

INTERPOSER CAGE ASSEMBLY—BINDS

Previously published in ATB 168.

To eliminate binds, break off the lug on the right rear of the interposer side frame where it engages the trip lever stud. The lug may be broken off in the Field by using the t-bender from the bottom of the machine. This lug is brittle and breaks easily. "Executive" Typewriters above S/N 8416360 will have this lug removed.

NOTE: Remove only the right rear lug as shown.



Remove Shaded Area

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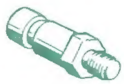
64 ENGINEERING CHANGE

Mech. Code 207

8-7-70

SUBJECT: Selector Bail Mounting Plate Stud—Redesigned



PURPOSE: To facilitate assembly. The selector bail mounting plate stud now incorporates a 6-40 thread. The mounting holes in both side frames have been tapped to accept the new stud. Standard and "Executive" Typewriters now use the same side frames.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION	PRICE
75	1190780	Stud, Selector Bail	.15

NOTE: For "Executive" Typewriters above approximate S/N 8410710.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

CHANGE TYPE: Manufacturing ● Use applicable service code.

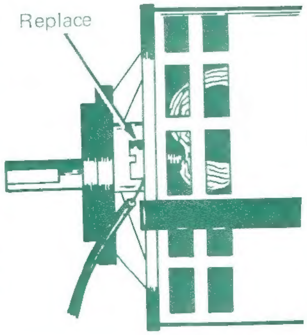
65 SAFETY

Mech. Code 211

8-26-70

SUBJECT: Motor Ground Wire—3-Wire Model D—Possible Electrical Safety Hazard

Previously published in CEM 198 (9-10-69).



SAFETY LOCATION: There is a potential safety hazard with the motor ground wire screw. A longer screw was substituted during manufacture and must be replaced. Some motors may have been installed so that the tip of the screw can contact the motor winding.

SAFETY CORRECTIVE ACTION: Replace the motor ground wire screw (Ref. 132, Mech. 211) with front frame screw, P/N 1090680 on the next service call or inspection.

NOTE: The motor can easily be removed from the bottom of the machine by first disconnecting the ground wire from the side frame.

PARTS REQUIRED:

REF.	PART NO.	DESCRIPTION
3	1090680	Screw

MACHINES AFFECTED: Model D's with 3-wire cords between S/N 6301868 to 6344240 Standard and 8367509 to 8382891 "Executive" Typewriters.

THE FOLLOWING INFORMATION FOR IBM USE ONLY

CHANGE TYPE: Safety ● CODE: 32